THE Amateur Photographer

Volume XVI



Digitized by the Internet Archive
in 2017 with funding from
Getty Research Institute

https://archive.org/details/amateurphotograp16unse

THE

AMATEUR PHOTOGRAPHER,

AN ILLUSTRATED POPULAR JOURNAL,

Devoted to the interests of Photography and kindred Arts and Sciences.

VOLUME XVI.—JANUARY, 1893.

London:
HAZELL, WATSON, AND VINEY, LD.,
1, CREED LANE, LUDGATE HILL, E.C.

1893.

LONDON
PRINTED
HAZELL, WATSON & VINEY, LD.
AND
BUNGAY
AYLESBURY

THE GETTY CENTER
LIBRARY

INDEX.

A

PAGE

A Camera Trip in the Romney Marsh - - - 214
A Correction - - - - - - - - 433
A European Lady's Adventure (*OV*) - - - 460
A Find (*OV*) - - - - - - - - 97
A Giant Panoramic Camera of Moessard's Pattern 152
A Leisure Hour in Winter - - - - - - 380
A Mistake (*OV*) - - - - - - - - 361
A New Album Wanted - - - - - - - 187
A New Chemical Name (*OV*) - - - - - 167
A New Club (*OV*) - - - - - - - 400
A New Comet (*OV*) - - - - - - - 293
A New Decision of the Camera Club (*OV*) - - 442
A New Exhibition (*OV*) - - - - - - 168
A New Field for Photography (*OV*) - - - 168
A New Idea - - - - - - - - - 390
A New Journal (*OV*) - - - - - - - 419
A New Power (*OV*) - - - - - - - 280
A New Process for Photo Dyeing - - - - 391
A New Use for Photography (*OV*) - - - 167
A New Use for Solio Paper - - - - - 224
A Novelty in Colours - - - - - - - 35
A Photograph an Essential (*OV*) - - - - 460
A Photographic Joke (*OV*) - - - - 167, 184
A Trip to Chicago - - - - - 98, 115, 152
A Remedy (*OV*) - - - - - - - - 478
A Sharp bit of Work (*OV*) - - - - - 443
A Simple Apparatus for making Lantern Slides by Reduction in the Camera by Artificial Light on Daylight - - - - - - - - - 388
A Suggestion - - - - - - - 381, 401, 423
A Thief Detective (*OV*) - - - - - - - 167
A Trip (*OV*) - - - - - - - - - 443
Aberdeenshire Photographic Society - 94, 179, 394
Abney, Capt. W. de W., C.B., R.E., F.R.S., "The Theory of Development" - - - - - - 125
Abolition of Medals, The (*OV*) - - - - 443
Absorption and the Photography of Colours - - 37
Accidental Exposure - - - - (*Q*) 276, (*A*) 334
Accrington Photographic Society - - 273, 370, 454
Acid Alum Fixing Bath - - (*Q*) 396, (*A*) 438, 491
" Fixing Salt - - - - - - - - 434
Action of the Judges, The (*OV*) - - - - 420
Adams, A. J., A Double-acting Plumb Indicator - 115
Adams' Club Album - - - - - - - 104
Address Required - - - - (*Q*) 147, (*A*) 203
Adjustment of Hand Cameras - - - - - 134
Affiliation of Photographic Societies - 290, 432, 480
" " Societies' Scheme - - - - 209
Algeria - - - - - - - - - - 65
Aldenham Institute - - - - - - 374, 412
Alpha Paper - - - - - - (*Q*) 374, (*A*) 416
Alston's Syphon and Washer - - - - - 365
Altering a Group - - - - - (*Q*) 334, (*A*) 416
Alum on Gelatine Plates, An Effect of - - - 463
Aluminium (*OV*) - - - - - - - - 441
AMATEUR PHOTOGRAPHER Competitions - - 73
" " 1892, Prize Slides - - 113
" " Lantern Slide Competition - 258, 284, 300, 323
" " Lantern Slides (*OV*) - 183
" " Slides at Pall Mall, The (*OV*) - - - 255
" " THE, 1892, Annual Lantern Slide Competition (*OV*) - - 2
" Photographer's Annual for 1892, The" (*OV*) - - - - 46
" " Tourist Index, The" - 30
" *Photographic Association* - - - 98
" Photography in America - - - 121
" *v.* Professional (*OV*) - - - 360, 378
"American Annual of Photography and Photographic Time Almanac" - - - 451
" Journalism (*OV*) - - - - - 33
" League of Amateur Photographers - 104
" Work and Workers - - - - 266
Amidol - - - - - - - 162, 225, 242, 323
" Cartridges - - - - - - - - 453
" for Lantern Slides - - - - - - 300
Amusing the Orphans - - - - - 380, 433
An Announcement (*OV*) - - - - - - 81
An Appeal - - - - - - - - - 424
" (*OV*) - - - - - - - - - 61
An Early Lens (*OV*) - - - - - - - 168
An Explosion (*OV*) - - - - - - - 185
An Important Question (*OV*) - - - - - 399
An Incident (*OV*) - - - - - - - 114
An Unusual and Interesting Exhibition - - - 177

PAGE

Anderson, Kenneth, A Dark Room - - - - 351
" W. S., An Effect of Alum on Gelatine Plates - - - - - - - - 463
"Annuaire Général de la Photographie" - - 217
Annual Dinner of Holborn Camera Club (*OV*) - 419
" Lantern Slide Competition (*OV*) - - 222
" " " " Our, 1892 (*OV*) 81
" " " " THE AMATEUR PHOTOGRAPHER, 1892 (*OV*) - 2
Another New Bath, by Edward Mason - - - 225
Anschutz Tachyscope - - - - - - - 453
Apparatus 4, 28, 35, 57, 66, 102, 135, 163, 201, 216, 251, 301, 309, 324, 343, 365, 392, 403, 434, 453, 464
Appeal, An - - - - - - - - - - 283
Appendix to Notes on Enlarging - - - - 63
Aptus Lantern Screens - - - - - - 384
Arcadia with a Camera, To - 194, 215, 245, 352, 392
Armstrong, Mr. H. E., F.R.S., "The Theory of Development" - - - - - - 26, 55, 125, 143
Arnold, C. D., The World's Fair - - - - 340
Around the Roman Campagna - - - - - 415
Art and Strange Yoke Fellows (*OV*) - - - 339
"Art Annual for 1892, The" - - - - - 329
Artistic Pictures, The (*OV*) - - - - - 240
" Work (*OV*) - - - - - - - 321, 478
Ashford, J., Lantern Slide Printing Frame - - 365
Ashton Photographic Society - - - - - 200
Ashton-under-Lyne Photographic Society 77, 291, 370, 472
Aston Photographic Society - - - - 394, 435
Austin, J. E., Medals at the Hackney Photographic Exhibition - - - - - - 424
" " Silver Printing with Matt Surface - 450
" J. O., Lantern Slide Carrier - - - 445

B

Backing Plates - - - - - - - - (*Q*) 475
Bailey, A. E., Leytonstone Camera Club Exhibition - - - - - - - - - 224
" " The Leytonstone Exhibition - - 364
Baker, H. B., The Theory of Development - - 123
Barnes, Catherine Weed, Amateur Photography in America - - - 121
" " " American Work and Workers - - 266
" " " The Object of Photography - - - 347
Barnes, Miss, and Mr. Snowden Ward (*OV*) - - 441
Barnet Dry Plate Factory, The - - - - - 159
Baron Rothschild's Collection (*OV*) - - - 478
Barrow Photographic Society - - - - 312, 353
Bath Photographic Society - - - 109, 349, 454
Beach, F. C., The World's Fair - - - - 340
Bedford and District Camera Club - - - - 289
" " " Exhibition (*OV*) 113, 134
Before the Camera - - - - - - - - 295
Belfast Photographic Society - - - - - 128
Belfast Y.M.C.A. - - - - - 38, 217, 273, 370
Bell, John S. B., Hand Cameras - - - - - 283
Benevolent, The - - - - - 416, 423, 454, 462, 491
Bennett, Lionel C., Photographs - - - - -
Biarritz - - - - - - - - - (*Q*) 334
Bibby, W. H., The Printing of Clouds - - - 486
Birkenhead Photographic Society - - - - 291
Birmingham Photographic Society 29, 162, 234, 257, 273, 291, 394, 435
Black Varnish - - - - - - - (*Q*) 43, (*A*) 59
Blackburn and District Photographic Society - 370
Blackfriars Album, The - - - - - - - 392
Blackfriars Company's Combined Lantern Mask and Binder, The - - - - - - - - 453
Blackheath Camera Club - - - - - - 394
" *Photographic Society* - - 312, 354, 454
Blacking Stops - - - - - - (*Q*) 219, (*A*) 236
Blackwood's Varioscopic Lens - - - - - 365
Bleaching Prints - - - - - (*Q*) 165, (*A*) 203
Blister Fiend, The - - - - - 4, 18, 34, 46, 83, 98
Blisters - - - - - - - - - 64, 478
Bodleian Treasures, The (*OV*) - - - - - 460
Bolton Photographic Society - - 273, 291, 371, 455
"Book of Delightful and Strange Designs, The" - 470
Botanical and Natural History Photography (*OV*) 460
Bothamley, C. H., The Theory of Development - 123
Bournemouth - - - - - - (*Q*) 43, (*A*) 59

PAGE

Bournemouth Photographic Society - - 312, 412, 475
Brass Work for Universal Hand Camera (*OV*) - 98
Brechin Photographic Society - - - 234, 312, 475
Brightman, Edward, A Correction - - - - - 462
Bristol and West of England Photographic Society 371
" *Photographic Society* - - - - - 455
British Association - - - - - - - 128
"British Journal Photographic Almanac for 1893, The" - - - - - - - - - - 470
Brixton and Clapham Camera Club - - - 393
" " *Photographic Society* 13, 77, 234, 273, 312, 490
" *Photographic Society* - - - - - 394
Bromide Enlargements - - - (*Q*) 438, (*A*) 491
" Enlarging and Contact Printing, How to do It - - - - - - - - 25
" of Copper Intensifier - - - - (*Q*) 79
" Paper - - - - - - - 63, 83, 224
" " - - - - - - (*Q*) 131, (*A*) 147
" " Developer - - - (*Q*) 79, (*A*) 95
Brown, G. E., Intensifying Lantern Slides with Silver - - - - - - - - - 341
Browning, John, The Blister Fiend - - - - 19
Bruno, W. H. B., A Universal Hand Camera 20, 53, 323
Brun's Glossy Transparent Colours - - - - 344
Bull, P. G., A New Album Wanted - - - - 187
Bullen, T. E. H., The Speed of Plates - - - 433
Burnard, T. C., Ferro-Prussiate as a Restrainer - 283
Burnham Beeches - - - - - - - (*Q*) 416
Burnham, Mr. S. W. (*OV*) - - - - - - 169
Burnishing - - - - - - - - (*Q*) 43, (*A*) 79
Burnley Photographic Society - - - 146, 234, 435
Burslem Photographic Society - - - 200, 291, 371
Butcher & Son's Lantern Novelties - - - - 344
Bynoe Photographic Frame, The - - - - - 57

C

Cadett & Neal's Monthly "Dry Plates" (*OV*) - 206
Cadett, James, The Expansion of Ammonia Solution - - - - - - - - - - 259
Cadett Lantern Plate - - - - - - - - 309
" Lightning Plate - - - - - - - - 301
" " Plates - - - - - - 276, 434
Calais and Boulogne - - - - - - - (*Q*) 253
Camera Bellows - - - - - - (*Q*) 438, (*A*) 491
" Club, A New Decision of the (*OV*) - - 442
" " and Van der Weyde's Photo Correction (*OV*) - - - - - - 280
" " Elementary Lectures (*OV*) - - 378
" " Exhibition Crowded, The (*OV*) - 321
" " " The (*OV*) - - - 256
" " Invitation Exhibition, The - - 281
" " Winter Session, The (*OV*) - - 168
" Fittings - - - - - - - 209, 223, 241
" Trip in the Romney Marsh, A - - - 214
Carbon Enlargements - - - (*Q*) 276, (*A*) 317
Carbonate and Washing Soda - - (*Q*) 165, (*A*) 203
Cardiff Photographic Society - 331, 394, 413, 435, 455
Carlisle Photographic Society - - - - - 395
"Cassell's Family Magazine" - - - - - 416
Catalogues - - 5, 35, 98, 188, 217, 327, 343, 392, 453
Catechism for the People, Pastor, and Preacher (*A*) 301
Catholic Lantern Slides (*OV*) - - - - - 360
Celloidin Paper - - - - - - - - 391
Central Photographic Club (*OV*) - - - - 420
Chadwick, W. J., Lantern Condensers - - - 229
" " Magic Lantern Matters - - 107
Chadwick's Stereo Camera - - (*Q*) 276, (*A*) 317
Chang, Mr. (*OV*) - - - - - - - - 419
Changing Bag - - - - - - - - (*A*) 15
Character of the Work, The (*OV*) - - - - 460
Charitable Lantern Entertaining Society, The - 323
"Charms of Photography, The" - - - - 469
Charterhouse Science and Art Schools and Literary Institute - - - - - - - - - 303
Cheap Lenses (*OV*) - - - - - - - - 184
" Photographs (*OV*) - - - - - - - 478
Chemical Name, A new (*OV*) - - - - - 167
Chemicals - - - - - - - (*Q*) 457, (*A*) 491
Chicago (*OV*) - - - - - - - - - 400
" A Trip to - - - - - - - - 152
" English Art at (*OV*) - - - - - 359
" Exhibition, The - - - - - 243, 258
Chiswick Camera Club - - - - - - - 292
Chit Chat - 185, 207, 221, 241, 257, 280, 298, 322, 340
" " (*OV*) - - - - - - - - - 183
Chloride Paper - - - - - - - - - 365

PAGE

Chloride Paper, Toning - - - - - - - 322
,, Printing - - - - (Q) 147, (A) 203
,, P. O. Paper - - - - - - - 300
Chloroplatinite of Potash - - - - - (A) 14
Chorley Photographic Society - - - - - 472
,, *Polytechnic* - - - - - - 203, 274
Christmas and New Year Mounts - - - - 403
,, Greeting to all (*OV*) - - - - - 459
City of London College Photographic Society - 435, 490
,, ,, *Y.M.C.A. Classes* (*OV*) - - - 206
Clarke's (Mrs.) Pictures at Leytonstone (*OV*) - 399
Classes and Conditions (*OV*) - - - - - 459
,, The (*OV*) - - - - - - - 338
Cleckheaton Photographic Society - - - - 94
Cleveland Camera Club Exhibition (*OV*) - - 441
Clouds - - - - - - - - - - - 11
Cobalt Toning - - - - - - - - - 153
Cold Bath Platinotype, New - - - - - 361
Collodio Chloride Printing Out Process, The - - 127
Colour Printing (*OV*) - - - - - - 184
,, Sensitive Plates (*OV*) - - - - - 257
COMPETITIONS:—
AMATEUR PHOTOGRAPHER - - - - - - 73
Amateur Photographer Lantern Slide, The 258, 284, 300, 323
Annual Lantern Slide, Our, 1892 (*OV*) - - 81
Holidays with the Camera, 1892 - - - - 74
,, ,, ,, (*OV*) - - - - 81
Lantern Slide (*OV*) - - - - - - 222, 239
Monthly Lantern - - - - - - - - 386
Monthly No. 37, Portraiture and Figure Study - 67
,, ,, 38. Inland Scenery with or without Figures - - - - - - 119
,, ,, 39. Sea Pieces and River Scenery 189
,, ,, 40. Portraiture and Figure Study 263
,, ,, 41. Inland Scenery with or without Figures - - - - - - 345
"Optimus" - - - - - - - - - 454
,, (*OV*) - - - - - - 240, 280, 321
Photomnibus (*OV*) - - - - - - - - 337
Combination Printing (*OV*) - - - - - - 320
Composition for Graph - - - (Q) 396, (A) 417
Concentric Lens, The New - - - - - - 154
Concerning Mountants - - - - - - - 434
Condensers - - - - - - (Q) 147, (A) 203
"Congres International de Photographie" - - - 217
Conrad, E. C., General and Photographic Chemistry 84, 100, 115, 136, 153, 171, 187, 209, 226, 261, 301, 404, 481
Construction of Twin Lens Hand Camera - 465, 483
Convention Matters (*OV*) - - - - - - 133
,, The (*OV*) - - - - - - - 33
,, The Hand Camera Division (*OV*) - 82
,, The Photographic - - - - - - 85
Conversazione, The (*OV*) - - - - - - 221
Convex Glasses for Crystoleum Painting (Q) 396, (A) 417
Cooke, J. R., Packing of Plates, etc. - - - - 462
,, ,, What to do with your Spoilt Negatives - - - - - - - - 401
Copying - - - - - - - - - (Q) 147, 181
,, Coloured Objects (*OV*) - - - - 257
Cornish Camera Club - - - - - 146, 371, 455
Correct Tones - - - - - - - - - 35
Correction, A - - - - - - 83, 260, 433, 463
Cotton-Jodrell, M.P., Lieut.-Col. E. T. D., "Notes on the Exposures for Moving Objects" - - - 428
Council of the London Photographic Society, The - 252
County Antrim - - - - - - - - - 177
County Down - - - - - - - - - 268
Courtonnes' Method (*OV*) - - - - - - 205
Craig, W. Pitcairn, "Lantern Slide" - - - - 402
,, ,, "Some Notes on Enamelling Gelatino-Chloride Prints - 199
,, ,, "Stripping Gelatino-Chloride Prints" - - - - - - 225
Cresco Fylma - - - - - - - - - 259
,, ,, - - - - - - - - (Q) 95
Crewe Photographic Society - - - - 200, 312, 472
Cribbing (*OV*) - - - - - - - - - 377
Criticism, Mr. Davison and his (*OV*) - - - 339
Cromwell Photographic Society - - - 234, 292
"Crouch Dresser" Hand Camera, The - - - 216
Croydon Camera Club - - - - 395, 435, 472
,, *Photographic Society* 200, 234, 274, 312, 331, 354, 395, 435, 472
"Curious Old Customs" - - - - - - - 365

D

Daly, H. de Burgh, "Our Competitions" - - - 19
Dark-Room - - - - - - - - - - 153
,, ,, - - - - - - - - (Q) 79, (A) 351
,, ,, at Broadstairs (*OV*) - - - - 114
,, ,, at Llandudno - - - - - - 283
,, ,, ,, (*OV*) - - - - 82, 97
,, ,, at Oban - - - - - - - 164
,, ,, Wanted - - - - - - - (Q) 131
Dark-Rooms - - - - - - - - (A) 14
Dark-Slide - - - - - - - - - (Q) 276
Dark-Slides - - - - - - - - - (Q) 396
Dark Tones for Silver Prints - - - (Q) 14, (A) 31
Darlington Photographic Society - - - 371, 435
Darroch, C. E., "Correct Tones" - - - - 35
Date of Publication (*OV*) - - - - - - 297
Davidson, B., "Amidol" - - - - - - - 242
Davison, Mr., and his Criticism (*OV*) - - - 339
Deadeye, Dick, "The Blister Fiend" - - - - 46
Debenham, W. E., "Relative Exposure for Varying Proportions of Image to the Original" - - 55
Deficiences in the Training of Photographers - 85
Deposit System, The (*OV*) - - - - - - 419
Derby Photographic Society - 201, 292, 395, 435, 473
Developan, The - - - - - - - - - 104
Developer, A New - - - - - - - - - 268
Developing - - - - - - (Q) 165, (A) 203
Developing Tent - - - - - - (Q) 181, (A) 253
Devon and Cornwall Photographic Society - - 435
Devonport Photographic Society - - - 201, 331
Dewsbury Photographic Society - - 58, 128, 292
Diameter and Focal Length of Lens - (Q) 396, (A) 417
Die Photographische Camera und die Momentapparate - - - - - - - - - 250
Directions for the Use of Rodinal - - - - 110
Discovery among the Minor Planets - - - - 229
Discovery of the Ark, The (*OV*) - - - - 168
Discovery of three New Planets by Photography - 333
Dishonest Advertisers and the Sale and Exchange Columns (*OV*) - - - - - - - - 17
Dissolving Views, Our - - - - - - 303, 383
Distance - - - - - - - (Q) 31, (A) 43, 59
Distant Photography - - - - - - - (Q) 59
Dollond's Monocle - - - - - - - - 403
,, ,, (*OV*) - - - - - - - 321
Dorking - - - - - - - - - - 128
Double Acting Plumb Indicator - - - - 115
Douglas (*I. of M.*) *Photographic Society* - - 455
Downey's Studies (*OV*) - - - - - - 460
Drayton Mill Photographic Blotting Book - - 57
Dresden - - - - - - - - - (Q) 276
Dresser, A. R., "Enlarging" - - - - - 480
,, on Lenses (*OV*) - - - - - - 316
Dry Plates - - - - - - - - - - 316
Dry Plates, how long will they keep? - - - 4
Durand's Backgrounds - - - - - - 324
Durham Camera Club Show (*OV*) - - - 478
Durham Photographic Society - - - 292, 371, 473
Duties of an Hon. Sec., The (*OV*) - - - 442

E

Early Photographs - - - - - - - - 364
East London Exhibition, The (*OV*) - - - - 256
,, ,, *Photographic Society* 95, 177, 201, 217, 292, 371, 413, 473
,, ,, ,, Society's Exhibition - 149
,, ,, ,, Society's Exhibition (*OV*) - - - 168
,, *Southsea Society*, Decease of the (*OV*) - - 168
Eastbourne - - - - - - - - (Q) 31, (A) 59
,, *Photographic Society* - 40, 235, 274, 395
Eastman and Ilford P.O.P. - - - - 187, 209
,, Gelatino-Chloride Paper, The - - - - 4
Edinburgh Photographic Society - 292, 343, 369, 371
,, *University Photographic Society* - - 455
Edwards & Co., B. J., Transparent Markings on Gelatine Papers Produced during Washing - 258
,, ,, W., Toning Chloride Paper - - - 322
Effect of Alum on Gelatine Plates, An - - - 463
Egypt - - - - - - - - - (Q) 236
Elder, H. M., The Theory of Development - - 92
Eldridge, Charles, The Charms of Photography - 469
Electric Spark Photographs, Professor Vernon-Boys on - - - - - - - - - 130
Electrical Wonder, The (*OV*) - - - - - 461
Elementary Photography - - - 6, 19, 36, 50, 63
Elizabethan Photographic Society - - - - 395
Elizabeth's Oak - - - - - - (Q) 181, (A) 203
Elliott & Son, A Suggestion - - - - - 423
,, ,, The "Photographic Record" - - 284
,, Son's Enlargements (*OV*) - - - 419
,, ,, Monthly Paper - - - - - 243
,, ,, New Leaflet (*OV*) - - - - 183
,, ,, Picture and our Critic (*OV*) - - 240
,, ,, ,, at Pall Mall - - - 243
,, ,, Wave Study - - - - - 464
Elliott's Picture, Messrs. (*OV*) - - - - 256
Ellis, Geo., Curious Old Customs - - - - 365
Ely Cathedral - - - - - - - - - 416
Employment of Oxygen - - - - - - - 444
Enamel Paper, Scholzig's - - - - - - 324
Enamelling - - - - - - - (Q) 131, (A) 147
,, Prints - - - - - - - - 402
,, Silver Prints - - - - - - 364
English Art at Chicago (*OV*) - - - - - 359
,, Artists and Japan (*OV*) - - - - 400
"English Illustrated Magazine," The (*OV*) - - 240
Enlarging - - - - - - - - - - 480
,, - (Q) 14, 253, 276, 397, (A) 276, 277, 334, 417
,, Apparatus - - - - (Q) 374, (A) 416
,, Lantern - - - - - (Q) 396, (A) 417
,, Negatives - - - - - - - (A) 31
"Enterprise" Metal Binding Strips, The - - 384
Errors in the ANNUAL (*OV*) - - - - - 97
Essex Cycling Union Lantern Show (*OV*) - - 133
Everybody's Hand Camera - - - - - - 57
Exchanging Prints - - - - - - - (Q) 253
Exeter Amateur Photographic Society - - - 244
Exhibition at Philadelphia, U.S.A. (*OV*) - - 377
,, Awards (*OV*) - - - - - - - 319
,, Goods - - - - - - - - - 209
EXHIBITIONS - 217, 230, 249, 272, 287, 311, 329, 353, 368, 393, 410, 420, 435, 454, 472, 490
A New (*OV*) - - - - - - - - - 168
An Unusual and Interesting - - - - - - 177
Le Ilford and District Camera Club - - - 289
,, ,, ,, ,, The (*OV*) 113, 134
Brixton and Clapham Camera Club - - - 393
Camera Club, The (*OV*) - - - - - - 256
,, ,, "Invitation," The - - - - 281
Chicago, The - - - - - - - - - 243, 255
Cleveland Camera Club (*OV*) - - - - 441
East London Photographic Society - - - - 311
,, ,, ,, ,, (*OV*) - 149, 168
,, ,, The (*OV*) - - - - - - 256
Edinburgh Photographic Society - - - - 369
Exeter - - - - - - - - - - 300
,, (*OV*) - - - - - - - - 207
Hackney (*OV*) - - - - - - - - 359
,, *Photographic Society* - - - 369, 393
,, Photographic Society "Annual" (*OV*) 134
,, Society, The - - - - - - - 243
,, Society's, The (*OV*) - - - - 240
Hendon Sunderland and Art Exhibition, The - 180
Hove Camera Club - - - - - - - 232
,, ,, ,, (*OV*) - - - - 62, 185
International (*OV*) - - - - - - - 298
Leytonstone and Hackney (*OV*) - - - - 339
,, *Camera Club* (*OV*) - - - 184, 360
,, *Camera Club, The* - - - - 369
North Middlesex Photographic Society - - - 412
Pall Mall and the Public Press, *The* (*OV*) - - 240
P. B. A. and Hollyer's Exhibition, The (*OV*) - 338
Photographic Society of Great Britain 230, 249, 273, 287
,, ,, ,, ,, *The* (*OV*) 168
,, ,, *India* (*OV*) - - - - 337
Polytechnic, The (*OV*) - - - - - - 441
Port Elizabeth (*Cape of Good Hope*) *Amateur Photographic Society* - - - - - - - 289
South London - - - - - - - 19, 411, 444
South London Photographic Society (*OV*) - 2, 133
Southport Social Photographic Club Soirée and Exhibition - - - - - - - - - 329
Southsea Amateur Photographic Society - - 273
Stockport Amateur Photographic Society - - 289
Stockwell (*OV*) - - - - - - - - 62
Todmorden (*OV*) - - - - - - - - 207
Tunbridge Wells Amateur Photographic Association - - - - - - - 410
,, ,, *Society* (*OV*) - - - - - 256
Woolwich Polytechnic (*OV*) - - - - - 442
Exhibitions and Medals - - - - 445, 453-
,, ,, ,, (*OV*) - - - - - -
,, ,, The Office and the Future of our - 192
Exhibitor Controversy, The (*OV*) - - - - 461
Expansion of Ammonia on Dilution - - - - 300
,, ,, ,, Solution - - - - 259
Experiments, Payne Jennings' (*OV*) - - - 478
,, with the Optical Lantern - - - 305
Exposure - - - - - - - - - - 323
,, (A.) - - - - - - - - - 15
,, for Interiors - - - - - - - 151
,, Meters - - - - - - - - 225
Exposures for Interiors - - - - - 134, 169
Extract, An (*OV*) - - - - - - - - 478
Eyes Open - - - - - - - - - 226

F

Fairfield Camera Club - - - - - - - 413
,, ,, ,, (*OV*) - - - - - - 153
,, *Photographic Society* - 58, 128, 217, 292, 331, 371, 473
Fallowfield's Photographic Remembrancer - 215
,, ,, ,, for October and November - - - - - 343
Farmer, Howard, Deficiency on the Training of Photographers - - - - - - - - 85
Faversham Photographic Society - - - - 235
Favre-Brandt, J., Pinhole Photography - - - 463
Fee Charged, The (*OV*) - - - - - - 256
Ferrotypes - - - - - - - - - (Q) 59
Ferrous Oxalate - - - - - - (Q) 416, (A) 438
Ferro-Prussiate as a Restrainer - - - - 283
Fillebrook Athenæum Photographic Exhibition - 462
,, *Photographic Society* - - - - 413
Film Carrier - - - - - - - - (A) 14
,, Enlarging by Cresco Fylma - - - - 94
,, Slide - - - - - - - - - (Q) 397
,, Slides - - - - - - - - - - 224
Finney, W. E. St. Lawrence, The Meaning of Kodak - - - - - - - - - 380
First Lecture, The (*OV*) - - - - - - 320
Fitch's Celluloid Films and Dish - - - - 385
,, Film Carrier - - - - - - - - 135
Fixed Focus - - - - - - (Q) 31, 59, (A) 43, 79
Flash Light, etc. - - - - - (Q) 397, (A) 417
Flashes - - - - - - - - - - 304, 387
Flats and Flat Country (*OV*) - - - - - 400
Folk-lorists and Photography (*OV*) - - - - 443
Foresters' Fête - - - - - - - - (Q) 165
Forett, J. G., "Hints to Beginners" - - - - 18
Forret, J. A., "Stripping Gelatino-Chloride Prints" - - - - - - - - - 209, 259
"Formules Photographiques" - - - - - 76
"Fortschritte in der Photographie - - - - 25
"Fotografisk Tidskrifts Arsbok" - - - - 188
Fretwell, J., "A Trip to Chicago" - - - - 152
Frith, C., "A New Society for Harringay" - - 445
Fungus - - - - - - - - (Q) 203, (A) 253
Fuzzitypes, The (*OV*) - - - - - - 321

PAGE

G

G. A. S. and Photography (*OV*) - - - - - 222
Galway - - - - - - - - - - (*Q*) 374
Garwood, A. J., "Universal" Hand Camera - - 299
Gelatine Lantern Slides - - - (*Q*) 356, (*A*) 419
" Plates for Lantern-Slide Work - - - 308
Gelatino-Chloride of Silver P.O.P. and Opals - 24
" " Paper - - - - - 364, 380, 391
George, H. Harvey, Exhibitions and Medals - 423
" " "The A. P. Lantern-Slide Competition" - - - 323
General and Photographic Chemistry 84, 100, 115, 136, 153, 171, 187, 209, 226, 261, 301, 404, 481
"Gentlewoman" Christmas Number, The - - 368
German Work - - - - - - - (*Q*) 31, (*A*) 59
Gibraltar - - - - - - (*Q*) 165, (*A*) 203
Gibson, Mr. J. Pattison - - - - - - - 261
Gilmer Bros. - - - - - - - - - 295
Glasgow and West of Scotland Photographic Society - - - - - - - - - - 312
Glasgow High School Photographic Society, 292, 331, 455
Glasgow Photographic Society - - - - 371, 413
Glaze on Prints - - - - - - (*Q*) 95, (*A*) 203
Gloucester - - - - - - - - - 169
Gloucester and Neighbourhood - - - - 160
Glycin - - - - - - - - - - 268
Gold Depositing - - - - - - - - (*A*) 14
Good Wishes (*OV*) - - - - - - - 478
Gordon, D. G., Lantern-Slides - - - - - 433
Gosport Photographic Society - - - - - 393
Gottlieb, A. W., The P.S.G.B. - - - - - 243
Gotz, J. R., Gelatino Chloride Paper - - - 364
Grant, Gregor, A Correction - - - - - 433
" " Multiple Coated or Multiple Film Plates - - - - - - 484
Grant, J. O., Medals at the Hackney Photographic Exhibition - - - - - - 424
" " The *Hackney Photographic Society* Trouble - - - - - - 445
Gray, J. F., An Appeal - - - - - - - 424
Great Yarmouth Photographic Society - 77, 179, 274
Greenock Camera Club - - - - - - 393
" *Photographic Society* - - - - - 217
Greenwich Photographic Society - - - - 313
Gregor, Mr., and his Champion (*OV*) - - - 339
"Guide to the Science of Photo-Micrography" - 368
Guildford Photographic Society - - - 436, 473

H

Hackney Dispute, The (*OV*) - - - - - - 442
Hackney Exhibition (*OV*) - - - - - 359, 378
Hackney Photographic Society, 13, 40, 58, 77, 95, 108, 128, 140, 162, 180, 201, 217, 235, 251, 274, 292, 313, 331, 354, 369, 371, 393, 413, 435, 455, 473, 481
Hackney Photographic Society's Annual Exhibition (*OV*) - - - - - - - - - - 134
Hackney Photographic Society Trouble - - - 445
" *Society's* Exhibition, The (*OV*) - - 240
Haddon, A., Expansion of Ammonia on Dilution - 300
Halifax Photographic Society - - - - 292, 371
Haliwhistle Photographic Society - - - - 77
Hand Camera - - - - - - - - (*Q*) 59
" " and how to use it, The - - - 250
" " Merlini's - - - - - - - 66
" " Shutter - - - - - - - (*Q*) 79
" " The (*OV*) - - - - - - - 460
" Cameras - - - - - - - - - 283
" Detective Camera - - - - - - (*Q*) 457
Hannam's Mounts - - - - - - - - 104
Hanover - - - - - - - - - (*Q*) 491
Hare's Camera - - - - - - - - - (*Q*) 95
Harlesden and Willesden Photographic Society 41, 128, 251, 337, 436
Harmonising Harsh Negatives - - 145, 161, 175, 233
Harris, C. J., "A Trip to Chicago" - - - - 98
" G. T., Gelatine Plates for Lantern Slide Work - - - - - - - - - 308
Harvey, Graham, "The Chicago Exhibition" - 258
" Lieut. G., "To Arcadia with a Camera" 194, 215, 245, 352, 392
Heath, C. E., New Tones on Chloride Paper - - 170
Hendon (Sunderland) Industrial and Art Exhibition, The - - - - - - - - - 180
Hepworth, T. C., Employment of Oxygen - - 444
Herefordshire Photographic Society 77, 292, 293, 395, 436
Herzhelm's Paper - - - - - (*Q*) 203, (*A*) 253
Hinton, A. Horsley, on Art (*OV*) - - - - - 184
" " Study and Practice of Art in Field Photography 140, 325, 449, 466, 482
" " The Office and the Future of our Exhibitions - - - - 192
" " The P.S.G.B. and Reform - 224
Hints on Posing - - - - - - - - 330, 347
" to Beginners - - - - - - - - 3, 18, 64
Hodges, J. A., Elementary Photography 6, 20, 36, 50, 65
" " How to Print in Carbon - - - 467
" " Skies in Lantern Slides - - - 390
" " " in Photographs - - 408, 452
" " The Oil Lantern and its Manipulation - - - - - - - - 307
" " Winter Photography - - - 487
Holborn Camera Club - - - - 274, 313, 354, 395
" *Photographic Society* - - 13, 235, 292, 436

PAGE

Holiday in Norway (*A*) - - - - 10, 23, 39, 52, 105
" Resorts - - - - - - - (*Q*) 31, (*A*) 43
" " and Photographic Haunts 9, 128, 160, 177, 214, 245, 268, 302
Holidays with the Camera - - - - - - 2
" " " Competition (*OV*) - - 81
" " " 1892 Competition - - 74
Hollyer's Exhibition (*OV*) - - - - - - 321
Holt, W. H., Lantern Slides - - - - - 260
Horn Dance, The (*OV*) - - - - - - - 297
Houghton's New Hinged Spring Printing Frame - 464
Hove Camera Club Exhibition - - - - - - 232
" " " (*OV*) - - - 62, 185
" *Photographic Society* - - 13, 128, 293, 455
How long will Dry Plates keep? - - - - - 4
" to Look at Photographs - - - - - 144
" " Make a Set of Photographic Apparatus 87, 102, 117, 138, 173, 197, 212, 227, 246, 285, 367, 446
" " Print in Carbon - - - - - - - 467
Howes, H., Waste Material - - - - - - 170
Huddersfield Photographic Society - - - - 354
Huggins, J. W., Moonlight Pictures - - - 480
Hughes, Mr. W. C. - - - - - - - 327
Hull Photographic Society - - - - - 235, 293
Humours of Photography, The (*OV*) - - - 443
Humphrey, E. J., The New Cold Bath Platinotype 380
Hunstanton - - - - - - - - - - 115
" - - - - - - - - - (*Q*) 95
Hutchinson, Herbert A., A Correction - - - 463
Hydro cum Eiko - - - - - - - (*A*) 15
Hydroquinone Developer - - - (*Q*) 457, (*A*) 491
" " for Lantern Slides - (*Q*) 236, (*A*) 276
" Development - - - - 186, 209
Hymn Slides - - - - - - (*Q*) 219, (*A*) 236
Hypo - - - - - - - - - - (*A*) 14
" in Toning Bath - - - - - (*Q*) 14, (*A*) 31

I

Ilford P.O.P. - - - - - - (*Q*) 131, (*A*) 147
" Year Book - - - - - - - - - 301
Illustrated Supplement - 67, 119, 189, 263, 345, 425
Illustration, Our (*OV*) - - - - - - - 338
Imperial Bromide Opals - - - - - - - 216
" Plates, The - - - - - - - - 365
Imperial "Special" Lantern Plate, The - - - 216
Important Question, An (*OV*) - - - - - 399
Improved Photometers - - - - - - - 130
Improvements in the Optical Lantern - - - 324
Incident, An (*OV*) - - - - - - - - 114
Individuality in Photography - - - - - 68
Industrial Competition, New Swindon - - - 65
Instantaneous Plates - - - - (*Q*) 181, (*A*) 237
Instanto Shutter - - - - - (*Q*) 31, (*A*) 203
Intensifying Lantern Slides with Silver - - - 341
Interchange of Civilities among Photographic Societies (*OV*) - - - - - - - - 206
International Exhibition of Journals (*OV*) - - 298
International Photographic Exchange (*OV*) - - 62
Ipswich Photographic Society - - - - - 490
Ireland, N. - - - - - - - - (*Q*) 131
" *Photographic Society* - - - - - 293
Irish Trip, An - - - - - - - - - 65
Is a Lantern Slide a Picture? (*OV*) - - - 399
Isle of Man, The - - - - - - - - 224
Isle of Thanet Photographic Society - - - 294
Isochromatic Plates - - - - (*Q*) 317, (*A*) 356
Itinerary of the "A. P." Slides (*OV*) - - - 255

J

James, R. W., Lantern Slide Carrier - - 423, 463
Japan Photographic Society - - - - - 473
Jeffreys, Alfred J., Dark Rooms at Llandudno - 283
Jennings', Payne, Experiments (*OV*) - - - 478
Jones, W. Fenton, The Hackney Society - - 243
Judges at Tunbridge Wells, The (*OV*) - - - 399
" The (*OV*) - - - - - - - - 338
Jupiter's Fifth Satellite (*OV*) - - - - - 255

K

Keeping Platinotype Paper - - - - - - 381
Kendal Photographic Society - - 218, 313, 371, 473
Kennedy, Patrick, Enamelling Prints - - - 432
Kensington and Bayswater Photographic Society 41, 274, 294, 354, 395, 436, 473
Keswick - - - - - - - - (*Q*) 14, (*A*) 31
Knight, Henry J., Photographs of the Year - - 365
Kodak, The Meaning of - - - - - - - 380
Krone, Mr., on Lippmann's Work (*OV*) - - - 183

L

"La Photographie en 1892" - - - - - - 250
" la Nuit - - - - - - - - 415
" Pratique des Projections" - - - - - 135
Lainer, Prof. Alex., The Rapid Hydroquinone Developer - - - - - - - - - 56
Lange, Mr. Paul - - - - - - - - - 334

PAGE

Lantern at the Stanley Show, The - - - - 385
" Condensers - - - - - - - - 229
" Fixtures - - - - - - - - - 310
" Notes - - - - - - - - - 309
" " and Noveltics - - - - - 384
" Screen - - - - - (*Q*) 334, (*A*) 374
" Screens - - - - - (*Q*) 203, (*A*) 219
" " "Aptus" - - - - - - - 384
" Slide (*OV*) - - - - - - - - 378
" " Carrier - - - - - 423, 445, 463
" " Competition (*OV*) - - - 222, 239
" " *Exchange Club* (*OV*) - - - - 149
" " Manual - - - - - - - 343
" " Printing Frame - - - - - 365
" " " Tylar's "Universal" 344
" Slides - - - - - 260, 402, 433, 463
" " by Reduction - - - - - 388
" " " (*Q*) 396, 416, (*A*) 417, 438
" " of Life and Character - - - 433
" Society, The - - - - - - - 332
" The, and How to Use It - - - - 7, 37
Large, H. S., "Eyes Open" - - - - - - 226
" " "The Blister Fiend" - - - 18, 82
" " "Waste Material" - - - - 151
" Slops and Rough Papers (*OV*) - - - 378
" Work not Direct Work (*OV*) - - - 339
Lay Press and Photography, The (*OV*) - - - 460
Lea, M. Carey, On Silver Hemisulphate - - - 487
Lead Toning - - - - - - (*Q*) 356, (*A*) 416
"Lecturer" Candle Lamp, The - - - 365, 384
Lectures at Societies (*OV*) - - - - - 205
" The Use of (*OV*) - - - - - 206
Leeds Photographic Society - - - - 436, 490
" Y.M.C.A. - - - - - - - - 371
Leeson, A. J., Platinum Toning - - - - 451
Leicester Photographic Society - - - - 371
Leigh Photographic Society - - - 251, 371, 413
Leisure Hour in Winter, A - - - - - 380
Lens - - - - - - - - - - (*Q*) 475
Lenses, Zeiss' New (*OV*) - - - - - - 359
Les Tableux de Projections Mouvementes - - 415
Letters to the Editor - 3, 18, 33, 46, 65, 82, 98, 115, 134, 150, 169, 186, 208, 224, 241, 258, 283, 299, 322, 340, 380, 401, 422, 444, 462, 480
Levett, F. W., South London Exhibition - - 19
Lewes Photographic Society - - 41, 201, 274, 354
Lewisham Photographic Society 109, 146, 176, 218, 274, 313, 355, 395
Leytonstone and Hackney Exhibitions (*OV*) - 339
" *Camera Club* - - - - 224, 282, 369
" " " Exhibition (*OV*) - 184, 360
" Club Dinner, The (*OV*) - - - 442
" Exhibition, The - - - - - 364
" *Photographic Society* 28, 77, 162, 294, 313, 316, 372, 436
Lifting Plates - - - - - - - (*Q*) 253
Limitation of Members (*OV*) - - - - - 319
Limits of Photography, The (*OV*) - - - - 443
Linging, Hy., Mason's Toning Bath - - - - 300
Liquid Ammonia - - - - - - - - 333
Liverpool Camera Club - 95, 172, 218, 251, 274, 313, 337, 372, 474
Liverpool Photographic Society 13, 58, 95, 129, 163, 235, 251, 332, 355, 371, 413, 436, 455
Llandudno - - - - - - - - - (*Q*) 95
Llanelly Photographic Society - - - - - 355
Loan of Negatives - - - - (*Q*) 356, (*A*) 397
Loaning of Prints and Slides (*OV*) - - - - 82
Local Reduction - - - - (*Q*) 253, (*A*) 276
" Views (*OV*) - - - - - - - - 400
Lombardi & Co. (*OV*) - - - - - - - 479
London and Provincial Photographic Society 201, 218, 251, 313, 355
" , Wm., Early Photographs - - - - 364
Long Focus - - - - - - - - - (*A*) 14
Louth Exhibition (*OV*) - - - - - - - 400
Louth Photographic Society - - - 314, 372, 413
Lumière, Couleur et Photographie - - - - 368
Luther's Catechism (*OV*) - - - - - - 257

M

MacLaurin, Charles, Concerning Mountants - - 434
Magic Lantern Matters - - - - - - 107
Magnesium as a Source of Light - - - - 295
Maidstone Photographic Society - - - - 436
Main, Hugh, South London Exhibition - - - 444
Manchester Amateur Photographic Society and the A.P. Slides (*OV*) - - - - - - - 255
Manchester Photographic Society - - - 372, 474
Manipulation of Chloride of Silver Gelatino Paper, The - - - - - - - - - - 286
Mantell, A. A., M.D., Exhibitions and Medals - 445
Manuel de Chimie Photographie - - - - 434
Margate Photographic Society - - - - 332, 436
Marion's Art Slides - - - - - - - 403
Marey, M. - - - - - - - - - 334
Marshall, John, Rubber Solution - - - - 462
Maskell (Mr.) at Brussels (*OV*) - - - - 361
Maskell's (Mr.) Visit to Paris (*OV*) - - - 320
Mason, Edward, Another New Bath - - - 225
Mason's Toning Bath - - - - 300, 323, 341, 364
Mawson's Lantern Plate, The - - - - - 309
McEwen, William, The A. P. Lantern Slide Competition - - - - - - - - - 284
McIntosh Society for Harringay - - - - 492

PAGE

Medal Hunters - - - - - - - - - 341
" Question, The - - - - - - - - 399
Medals Again (*OV*) - - - - - - - - 400
" and Lantern Slides - - - - - - 424
" at Pall Mall - - - - 224, 241, 243, 258
" at the Hackney Photographic Exhibition - 424
" The Abolition of (*OV*) - - - - - - 443
" The P.S.G.B. - - - - - - - - 283
Merlini's Hand Camera - - - - - - - 66
Metal Plates - - - - - (*Q*) 356, (*A*) 416
Mezzotype Paper - - - - - - - 324, 344
"Mezzotype" and other Rough Surface Silver Prints - - - - - - - - - 405
Midland Camera Club - - - - - - - 275
Mistake, A (*OV*) - - - - - - - - - 361
Mitchell, A., "Amusing the Orphans" - - 380, 433
" M.D., Charles L., The Colour Siren in Landscape Photography - - - - - - 156
Monocle, The (*OV*) - - - - - - - - 420
Monthly Competition. No. 37, Portraiture and Figure Study 67, 73
" " " 38, Inland Scenery with or without Figures - 119
" " " 39, Sea Pieces and River Scenery 189
" " " 40, Portraiture and Figure Study - 263
" " " 41, Inland Scenery with or without Figures - 345
" " " 42, Sea Pieces and River Scenery 425
" Lantern Competition - - - - - - 386
Moonlight Effects (*OV*) - - - - - - - 443
" Pictures - - - - - - - - - 480
" Scenes - - - - (*Q*) 236, (*A*) 275
More Exhibitions (*OV*) - - - - - - - 451
Morrow, J. Lloyd, The P.S.G.B. Medals - - - 283
Moss, G. H., The Collodio-chloride Printing-out Process - - - - - - - - - 127
Mottled Negatives - - - - - (*Q*) 147, (*A*) 203
Mounting - - - - - - - (*Q*) 203, (*A*) 253
" Ilford P.O.P. - - - - - - (*Q*) 95
" Solio Prints - - - - (*Q*) 276, (*A*) 534
Mounts for Chloride Prints - - - - - - 403
Multiple Coated or Multiple Film Plates - - - 484
Multum in Parvo Camera - - - - - (*Q*) 396
Munster Photographic Society - - - - - 314

N

Nash, C. E. F., Mason's Toning Bath - - 323, 364
Negative Making - - - - - - - (*A*) 14
Negatives - - - - - - - - - (*Q*) 438
" and Positives - - - - - - - (*A*) 438
" into Positives - - - - - - (*Q*) 416
Neutralising Clearing Bath - - - - - (*A*) 416
Newcastle Photographic Society - 218, 396, 437, 490
New Application of Photography to Litho Printing 265
" " " the Camera, A (*OV*) - - - 298
" Blood in the Editorial Staff (*OV*) - - - 319
" Clasp, The - - - - - - - - - 3
" Cold-bath Platinotype - - - - - - 361
" " " Paper (*OV*) - - - 339
" " " " , The - - - - 360
" Decision of the Camera Club (*OV*) - - 442
" Field Glass Pattern Hand Camera - - - 28
" Hinged Spring Printing Frame, Houghton's 464
" Journal, A (*OV*) - - - - - - - 419
" Platinotype Process - - - - - - (*Q*) 253
" Society, A - - - - - - - - - 300
" " for Harringay, A - - - - - 445
" South Wales and English Apparatus (*OV*) - 257
" Tones on Chloride Paper - - - - - 170
Newman Shutter, The - - - - - - - 66
Nicholl, G. T., Photography as an Art - - - 430
No Personalities (*OV*) - - - - - - - 359
Noakes, D. W., Single Oil Lanterns for Lecture Purposes - - - - - - - - - 389
North Ireland - - - - - - - - (*A*) 147
" *London Photographic Society* 14, 41, 78, 201, 235, 275, 314
" *Middlesex Photographic Society* 29, 41, 78, 109, 163, 201, 252, 294, 372, 412, 455
" *Surrey Photographic Society* 235, 314, 355, 413, 456
Northern Tasmania Camera Club - - - - - 164
Norton, C. Goodwin, "The Lantern and How to Use It" - - - - - - - - - - 7, 37
Notes on Colour - - - 114, 150, 208, 362, 379, 421
" the Exposures for Moving Objects - - 428
" " Permanency of Gelatino-chloride Prints - - - - - - - - 300
Notice (*OV*) - - - 68, 114, 134, 150, 169, 442
" of Articles on Photographic Chemistry and Home-made Apparatus (*OV*) - - - - - 62
Nottingham Mechanics' Institution Camera Club - 129
Noverre, W. L., "Watkins' Exposure Meter" - 433
Noxinol - - - - - - - - - - 324, 340
Number of Exhibits (*OV*) - - - - - - 221

O

Oakden, C. H., "South London Photographic Society" - - - - - - - - - - 445
Object of Photography, The - - - - - - 347
Oil Lantern and its Manipulation, The - - - 307
One Good Use for Spoilt Plates - - - - - 98
One or two Corrections - - - - - - - 461
Opera Glass Lens - - - - - (*Q*) 95, (*A*) 203
"Optimus" Artificial Light Enlarging Apparatus, The - - - - - - - - - 343
" Competition - - - - - - - - 454
" " (*OV*) - - - 240, 280, 321
" Lantern, The - - - - - - - - 384
" " The Objective - - - - 384
" Magnesium Lamp, The - - - - 453
" Universal Copying Apparatus, The - 464
Ordish, T. F., "Photographers and Folk Lore" - 444
Ostend - - - - - - - - - - (*Q*) 59
Our Competition (*OV*) - - - - - - - 361
Our Competitions - - - - - - - 19, 461
Our " (*OV*) - - - - - - - - 460
Our Dissolving Views - - - - - - 303, 383
Our Efforts (*OV*) - - - - - - - - 419
Our Illustrated Supplement (*OV*) - - - - 183
Our Illustration (*OV*) - - - - - - - 338
Our Lantern Screen - - - - - - - 303, 477
Our " " (*OV*) - - - - - - - 297
Our Next Week's Issue (*OV*) - - - - - 280
Our Prize Winners (*OV*) - - - - - - 459
Our Supplement (*OV*) - - - - - - - 46
Our Views 1, 17, 33, 45, 61, 81, 97, 113, 133, 149, 167, 183, 205, 221, 241, 255, 279, 297, 319, 337, 359, 377, 399, 439, 441, 459, 477
Our Views on the Medal Question (*OV*) - - 359
Our 1892 Slides (*OV*) - - - - - - - 206
Ourselves and Lectures (*OV*) - - - - - 206
Outdoor Winter Photography - - - - - 350
Over-Printing - - - - - - - - - 18
Oxford Dark Room - - - - - - - - 177
" *Photographic Society* - 275, 355, 395, 437, 474

P

Packing of Plates - - - - - - 444, 462, 480
Paget Company's Novelties, The (*OV*) - - - 361
" Prize Lantern Plates - - - - - - 384
Painting Bromides - - - - - (*Q*) 457, (*A*) 491
Pall Mall and Dallmeyer's Lens (*OV*) - - - 280
" " Show - - - - - - - - - 304
Panoramic Album - - - - - - - - 301
Patenting all over the World (*OV*) - - - - 185
Peak District Slides (*OV*) - - - - - - 461
Peripatetic Photographer, The (*OV*) - - - 401
Perkins, T., M.A., Holiday Resorts and Photographic Haunts - - - 9
" " A Correction - - - - - 82
Philadelphia Photographic Society - - - - 474
Photo. Dyeing, A New Process for - - - - 391
" Mechanical Processes - - - - - 434
" Micrography - - - - - (*Q*) 43, (*A*) 49
" *Portfolio Club* - - - - - - - - 299
" Prints suitable for Crystoleum Painting (*Q*) 396, (*A*) 417
" Rubber Stamp, The - - - - - - 200
" Zincography - - - - (*Q*) 276, (*A*) 295
Photograph an Essential, A (*OV*) - - - - 460
" of Lightning, A (*OV*) - - - - 46
Photography by Lightning, A (*OV*) - - - - 461
Photographer, The Unmitigated (*OV*) - - - 360
Photographers, A New Field for (*OV*) - - - 168
" and Folk Lore - - - - - - 444
" " their Art (*OV*) - - - - 361
Photographers' Benevolent Association - 283, 290, 342
" " " (*OV*) - 279
P.B.A. Lantern Show (*OV*) - - - - - - 321
" The (*OV*) - - - - - - - - 279
" " and Hollyer's Exhibition (*OV*) - - 338
Photographic Society of Great Britain - 251, 332, 413
P.S.G.B. Medals, The - - - - - - - - 299
" Permanent Gallery (*OV*) - - - - 279
" Reform, The - - - - - - - - 224
" Show, The (*OV*) - - - - - - 256
" The - - - - - - - - - 243
Photographic Convention Programme (*OV*) - - 1
" " The - - - - 47, 68
" " " (*OV*) - - - 45
" Diary, A (*OV*) - - - - - - - 256
" Enlargements, How to Make Them - 25
" Exhibitions (*OV*) - - - - - - 319
" Joke, A (*OV*) - - - - - - - 167
" Method of Mapping the Magnetic Field - - - - - - - - 489
" Paper for Copying Tracings - - 305
" Procedure 5, 75, 99, 136, 170, 244, 260, 342
" Record, The - - - - - 284, 388
" Repreduction Processes - - - 176
" *Society of Great Britain* 38, 163, 230, 474
" " " *Ireland* - - - 396, 456
" " " *Japan* - - - - - 414
" Spies (*OV*) - - - - - - - - 169
" " in Canada (*OV*) - - - 185
" Tabloids, The - - - - - - 57
" Toy, A (*OV*) - - - - - - - 184
" Tragedy, A - - - - - - - - 301
" Trip to the World's Fair (*OV*) - - 61
Photographing Criminals (*OV*) - - - - - 298
" in London - - - - - - (*A*) 14
" Plants (*OV*) - - - - - - - 460
" Snowflakes - - - - - - - 454
" the Insane (*OV*) - - - - - 257
Photographing Thoughts (*OV*) - - - - - 320
Photographs as Pictures (*OV*) - - - - - 478
" in Railway Carriages (*OV*) - - - 183
" of Prehistoric and Ancient Objects - 333
" of the Year - - - - - - 365, 380
" of " (*OV*) - 168, 222, 240, 256, 297, 320, 361
" on the Electric Wire (*OV*) - - - 378
Photos, Herr Anschutz's (*OV*) - - - - - 461
Photography, A New Use for (*OV*) - - - - 167
Photography an Aid to Business (*OV*) - - - 461
" and Cycling (*OV*) - - - - 338
" and Exploration (*OV*) - - - 205
" " Royalty (*OV*) - - - - 167
" " the Stars - - - - - - 453
" as an Art - - - - - - - - 430
" at Home - - - - - - - - 31
" " Competition (*OV*) - - 34
" at the British Association - - - 146
" " Chicago Exhibition (*OV*) - 256
" by Rule - - - - - - - - 90
" in Colours - - - - - - - 51
" in Meteorology - - - - - - 269
" not a Sport (*OV*) - - - - - 377
" of Colours, The - - - - - 334
" of Geology - - - - - - - 178
" , Star - - - - - - - - 334
" , Stereoscopic - - - - - - 248
" , The Charms of - - - - - - 468
" , The Humours of (*OV*) - - 443
" , The Lay Press and (*OV*) - - 460
" , The Limits of (*OV*) - - - 443
" , The Object of - - - - - 347
" to be the Judge (*OV*) - - - 255
Photomnibus Competition (*OV*) - - 98, 298, 337
" , The - - - - - - - - - 19
Pickering, H., Eastman and Ilford P.O.P. - 187, 209
Pickering's, Mr., Experience (*OV*) - - - - 207
Pictorial Photography at Charing Cross Road - 281
" Selection in Photography - - - - 152
Pictures, The - - - - - - - - - 382
Pinhole Photography - - - - - - - - 468
Pinholes - - - - - - - - - (*A*) 15
Pizzighelli Paper - - - - - (*Q*) 236, (*A*) 253
Plain Papers - - - - - - (*Q*) 334, (*A*) 357
Plate Numbers - - - - - - (*Q*) 396, (*A*) 491
Platinotype - - - - - - - - - 301
" - - - - - - - - - (*Q*) 59
" Company's Demonstrations, The (*OV*) 320
" Paper, The New Cold Bath (*OV*) - 339
Platinotypes - - - - - - (*Q*) 356, (*A*) 416
Platinum Printing - - - - - (*Q*) 219, (*A*) 253
" Toning - - - - - - - - - 451
" " - - - - - (*Q*) 356, (*A*) 375
Polytechnic Exhibition, The (*OV*) - - - - 441
" Technical Lectures, The (*OV*) - - 321
Popham, Mr., of South Shields (*OV*) - - - 1
Port Elizabeth (Cape of Good Hope) Amateur Photographic Society - - - - - - - 289
Portraits on Plain Paper - - - (*Q*) 295, (*A*) 334
Portsmouth Dockyard - - - - (*Q*) 31, (*A*) 59
Positive Appearance - - - (*Q*) 181, (*A*) 203, 236
Pot-hunters (*OV*) - - - - - - - - 320
Powell's Compressed Gold Baths - (*Q*) 79, (*A*) 131
Practical Guide to Photographic and Photo-Mechanical Printing Processes - - - - 188
"Practical Photographer's Annual," The - - 470
" " Label Book," The - 250
" Index of Photographic Exposure, The - 57
Preparing for Exhibitions (*OV*) - - - - 361
Preston Photographic Society - - - - 314, 396
Pringle, Mr., on the Sandell Plate (*OV*) - - 420
Printing in Clouds - - (*Q*) 165, 396, (*A*) 203, 417
" in Platinum - - - - - - - - 76
" of Clouds, The - - - - - - - 486
" -out Lantern Plate - - - - - - 384
Production of Platinum in Russia - - - - 110
Professional *v.* Amateur (*OV*) - - - - - 319
Professor Vernon Boys on Electrical Spark Photographs - - - - - - - - - - 130
Proposals (*OV*) - - - - - - - - - 443
Pudsey Photographic Society - - - - - 414
Putney Photographic Society 58, 109, 180, 218, 275, 314, 355, 372, 414

Q

Question, A - - - - - - - - - - 170

R

Ramsgate Photographic Society - - - - 311
Rapid Hydroquinone Developer, The - - - - 56
Rational Development - - - - - - 407, 479
Reader, F. G., "A Camera Trip in the Romney Marsh - - - - - - 214
" " "Photo Portfolio Club" - - - 299
"Recepte und Tabellen für Photographie und Reproductionstechnik" - - - - - - 217
Record Press, Limited, The - - - - - - 474
Reducing Intensified Negative - (*Q*) 165, (*A*) 203
Reflection of Light - - - - - - - - 349
Reflector with the Projection Microscope, The - 431
Reflectoscope, The - - - - - - - - 344

PAGE

Relative Exposures for Varying Proportions of Image to the Original - - - - - - - 55
Remedy, A (*OV*) - - - - - - - - - 478
Removing Stains - - - - - (*Q*) 416, (*A*) 438
Reproduction of Old Books and MSS. (*OV*) - - 256
Retirement of Mr. Hastings (*OV*) - - - - - 149
Retouched Negatives - - - - - - - (*Q*) 416
Reviews 25, 35, 77, 135, 152, 188, 250, 301, 329, 343, 368, 392, 415, 434, 451, 470
Revolving Show Case - - - - (*Q*) 438, (*A*) 491
Reynolds, J., M.A., F.R.G.S., "Scientific Resort in Photography" - - - - - - - - - 432
Richards' Patent Corners - - - - - - - 57
Richmond Camera Club - - - - - - - - 409
" " Discussion (*OV*) - - - - 360
" *Photographic Society* 131, 163, 202, 294, 332, 355, 396
Ritchie, C. D., "A Trip to Chicago" - - - - 115
Riviera - - - - - - - - - (*Q*) 295, (*A*) 317
Robinson, H. P., "Individuality on Photography" 68
Rochdale Photographic Society - - - - - - 109
Rochester Photographic Society - - - - - 456
Ross - - - - - - - - - - (*Q*) 14, (*A*) 43
Roff, J. D., "Lantern Slides" - - - - - - - 463
Rotherham Photographic Society 109, 202, 275, 356, 456
Rough Paper Prints (*OV*) - - - - - - - 378
" Surface Papers and Large Sizes (*OV*) - 339
Royal Academy and Chantrey Bequest (*OV*) - 279
" Cornwall Polytechnic Society's Awards (*OV*) - - - - - - - - - - 150
Rubber Solution - - - - - - - - - - 462
Ruskin's Dictum (*OV*) - - - - - - - 321

S

St. Bartholomew's Hospital (*OV*) - - - - - 437
Sale and Exchange 15, 31, 44, 60, 79, 96, 112, 132, 148, 165, 181, 204, 219, 237, 254, 277, 296, 317, 335, 375, 397, 439, 457, 475, 492
Salwey, H., "Medals and Lantern Slides" - - - 424
"Sandell" Plate, The - - - - - - - - - 4
Sat. Sol. Hypo. - - - - - - (*Q*) 59, (*A*) 131
Sawyer, Mr. Lyd. - - - - - - - - - 252
'Schnapek's" Electric Retouching Apparatus - 464
'Scolzig's" Enamel Paper - - - - - - - 324
Scientific Experts (*OV*) - - - - - - - 401
Scientific Research in Photography - - - - - 432
"Scott's" Dark Slides - - - - - - - - 251
Seaside Exposures - - - - - (*Q*) 219, (*A*) 236
Sensitising Silk - - - - - - (*Q*) 317, (*A*) 334
Sepiatype - - - - - - - - - - (*Q*) 59
Schultess-Young, H. S., M.A., "Amidol" - - - 225
Sheffield Photographic Society 41, 129, 163, 202, 218, 275, 356
Shutter - - - - - - - - - (*Q*) 396, (*A*) 417
Silver Hemisulphate, On - - - - - - - - 487
Silver Printing with Matt. Surface - - - - - 450
Simkins, J., "Rational Development" - - - - 407
Simple Changing System for Hand Camera - - - 422
Single Oil Lantern for Lecture Purposes - - - 389
Sink - - - - - - - - - - (*Q*) 416, (*A*) 438
Skies in Lantern Slides - - - - - - - - 390
" Photographs - - - - - - - - 408, 452
Skinner, E. E., "A New Use for 'Solio' Paper" - 224
Slide Making and Enlarging (*OV*) - - - - - 420
Smelt, C. Stanhope, "A Trip to Chicago" - - - 115
"Smith's" Patent Plate Washer - - - - - 365
Snap Shot - - - - - - - - - - (*Q*) 79
Snow (*OV*) - - - - - - - - - - - 443
Societies' Fixtures 14, 29, 42, 58, 78, 95, 110, 130, 147, 165, 180, 202, 218, 236, 252, 294, 316, 335, 356, 373, 396, 415, 437, 456, 491
Societies' Free List (*OV*) - - - - - - - - 297
Societies' Meetings 13, 29, 40, 58, 77, 94, 109, 128, 146, 162, 179, 200, 217, 234, 251, 273, 291, 312, 331, 353, 370, 394, 412, 435, 454, 472, 490
Societies' Notes 291, 311, 330, 353, 370, 394, 412, 435, 454, 472, 490
" " (*OV*) - - - - - - - - 279
" Reports (*OV*) - - - - - - 401, 420
Society for Forest Gate - - - - - - 170, 187
" " Harringay - - - - - - - - 462
Society's Standard, The - - - - - - - - 161
Solio Paper (*OV*) - - - - - - - - - 150
Some Notes on Enamelling Gelatino-chloride Prints - - - - - - - - - - - 199
Something Nebulous (*OV*) - - - - - - - 360
South London Exhibition - - - - - - - - 19
" " " (*OV*) - - - - 444
" " *Photographic Society* 14, 42, 78, 109, 163, 202, 256, 276, 315, 373, 411, 424, 445, 456, 490
" " Photographic Society Exhibition (*OV*) - - - - - - - - - 133
" " Societies Exhibition (*OV*) - - - 2
" *Manchester Photographic Society* 41, 180, 252, 356
Southport Photographic Society - - - - - - 29
" Social Photographic Club Soirée and Exhibition - - - - - - - - - 329
Southsea Photographic Society - - - 42, 78, 146
South Shields - - - - - - - - - - 135
Sparshatt, John, Exeter Exhibition - - - - 300
Special Announcement, A (*OV*) - - - - - 62
" Notice (*OV*) - - - - - - - - - 2
Speed of Numbers - - - - - - - 445, 480
" Plates, The - - - - - - - 403, 433
" Shutter - - - - - - - - (*Q*) 396
Spen Valley Photographic Society - - - 14, 129
Spirits of Photographs (*OV*) - - - - - - 206
Spiritualism and Photography (*OV*) - - - - 206
Spoilt Plates, One Good Use for - - - - - - 98
Spotting - - - - - - - (*Q*) 147, (*A*) 203
Springs, etc. - - - - - - - (*Q*) 374, (*A*) 416
Spurgeon, J. W., Fillebrook Athenæum Photographic Exhibition - - - - - - - - 462
Staffordshire Photographic Survey Society, The - 334
Stanley Club, Presentation of Prizes, The (*OV*) - 461
" Cycle Show, The - - - - - - - 265
" Diploma of Merit, The (*OV*) - - - - 338
" Show, The (*OV*) - - - - 338, 377, 381
Star Photography - - - - - - - - - 334
Starch Mountant - - - - - - (*Q*) 295, (*A*) 317
Stereoscopic Photography - - - - - - - - 248
" " (*OV*) - - - - - 478
" Slides - - - - - - - - - - 57
Stirn's Camera - - - - - - - - (*Q*) 203
Stockport Amateur Photographic Society 289, 373, 404
Stockton Photographic Society - - - - 129, 373
Stops - - - - - - - - - - (*Q*) 31, (*A*) 43
Storehouse of Study, A (*OV*) - - - - - - 321
Stratford-on-Avon - - - - - - (*Q*) 59, (*A*) 79
Stripping Gelatino-chloride Prints - - 208, 225, 259
Studies in Photography (*OV*) - - - - - - 134
Studio Builders - - - - - - - - (*Q*) 59
Study and Practice of Art in Field Photography 140, 325, 449, 466, 482
Submarine Mining and Volunteer Submarine Miners - - - - - - - - - - 195
Substitute for the Lime - - - - - - - - 309
Suggestion, A - - - - - - - 381, 423, 444
" " (*OV*) - - - - - - - - 2
Sulpho-cyanide Toning Bath - - - - - (*Q*) 59
Sun Pictures (*OV*) - - - - - - - - - 33
Sunderland Photographic Society - - - - 315
Supplement, Our (*OV*) - - - - - - - - 46
Supplementary List of Optical Lantern Slides - 327
Sutcliffe, F. M., How to Look at Photographs - 144
" " on Exhibitions (*OV*) - - - - 461
Sutton, Henry, Amidol - - - - - - - - 323
Sutton Photographic Society - - - 218, 414, 490
Sydenham Photographic Society - - - - 276

T

Table of Plate Speeds - - - - - - - - 126
Tables of Exhibition (*OV*) - - - - - - - 207
Technical Lectures at the People's Palace (*OV*) - 206
Telephotographic Lens (*OV*) - - - - - - 378
" " " The - - - - - - 250
Temperature of Solutions (*OV*) - - - - - 477
THE AMATEUR PHOTOGRAPHER, 1892, Annual Lantern Slide Competition (*OV*) - - - - - 2
The Action of the Judges (*OV*) - - - - - 420
The Barnet Dry Plate Factory - - - - - - 159
The Benevolent - - - - - - - - - 416
The British Public and Science (*OV*) - - - 184
The *Camera Club* Winter Session (*OV*) - - - 168
The Classes (*OV*) - - - - - - - - - 338
The Collodio-Chloride Printing-out Process - - 127
The Colour Screen in Landscape Photography - 156
The Convention (*OV*) - - - - - - - - 34
The Critic (*OV*) - - - - - - - - - 222
The "Enterprise" Metal Binding Strips - - 384
The "Frena" Hand Camera - - - - - - 195
The Judges (*OV*) - - - - - - - - - 338
The Judges at Tunbridge Wells (*OV*) - - - 399
The Lantern at the Stanley Show - - - - 385
The largest Photograph - - - - - - - 342
The late Mr. C. V. Shadbolt (*OV*) - - - - 34
The Meaning of "Kodak" - - - - - - - 380
The Medal Question (*OV*) - - - - - - 399
The Monocle (*OV*) - - - - - - - - - 420
The N. & G. Aluminium Blind Shutter - - - 200
The New Concentric Lens - - - - - - 154
The "Optimus" Lantern - - - - - - - 384
The " " Objective - - - - 384
The P.B.A. - - - - - - - - - - - 322
The P.S.G.B. and Affiliated Societies (*OV*) - - 206
The " Exhibition (*OV*) - - - - - - 168
The Pall Mall Exhibition and the Public Press (*OV*) 240
The Pall Mall Show (*OV*) - - - - - - - 221
The Peripatetic Photographer (*OV*) - - - 401
The Personal Equation (*OV*) - - - - - 205
The Queen's Dolls (*OV*) - - - - - - - 18
The Reflector with the Projection Microscope - 431
The Result (*OV*) - - - - - - - - - 221
The Speed of Plates - - - - - - - - 433
The *Star* on the Pall Mall Show (*OV*) - - - 240
The Theory of Development - - 26, 55, 123, 125, 143
The Use of Lectures (*OV*) - - - - - - 206
The World's Fair - - - - - - - - - 340
Thirsk Disaster Stereograms, The (*OV*) - - - 339
This Tone - - - - - - - - - - - 324
Thomas, Philip, Affiliation of Societies Scheme - 209
Thomason, Geo. A., Stereoscopic Photography - 248
Thompstone, R. W., Printing in Platinum - - 76
Three-Ply Fretwork - - - - (*Q*) 334, (*A*) 357
Times Critique, The (*OV*) - - - - - - 221
Tissandier, M. Gaston - - - - - - - - 334
To Arcadia with a Camera - - - - - 194, 215
To what shall we come? (*OV*) - - - - - - 320
Too High a Standard (*OV*) - - - - - - 399
Todd Forret, Magnesium Flash Lamp, The - - 434
Todmorden Exhibition - - - - - - - - 207
Todmorden Photographic Society - - - 147, 373
Tollie, F. J., Medals at Pall Mall - - - - 241
Tomes' Negative Box - - - - - - - - - 324
Toning - - - - - - - - - (*Q*) 295, (*A*) 334
" Bath - - - - - - - (*Q*) 334, (*A*) 416
" " Mason's - - - - - - 300, 323, 341
" " The New - - - - - - - - 258
" by Acetate of Lime - - - - - - - 333
" Chloride Paper - - - - - - - - 322
" Chloride Prints - - - - - - - - 178
" Gelatino-Chloride, P.O.P. - - - - 12, 22
" Slides - - - - - - - (*Q*) 334, (*A*) 416
" Trouble - - - - - - - (*Q*) 356, (*A*) 416
Torquay Photographic Society - - - - - - 332
Touring - - - - - - - - (*Q*) 14, 276, (*A*) 31
Touring (Kent and Sussex) - - - (*Q*) 31, (*A*) 43
Trade Notes - - - - - - - - - - 310
Transferring Albumen Prints - - (*Q*) 253, (*A*) 334
Transmitting Images by Telegraph (*OV*) - - - 205
Transparent Albumen Colours, Wagner's - - - 66
" Markings on Gelatine Negatives produced during Washing - - - - 242
" Markings on Gelatine Plates produced during Washing - - - 258, 283
Trip to Chicago, A - - - - - - - - - 135
Truth and Amateur Photographers (*OV*) - - - 222
" and the Free Portrait Dodge (*OV*) - - - 298
" on the Amateur - - - - - - - - 242
Tunbridge Wells Amateur Photographic Association - - - - - - - - - - - 410
Tunbridge Wells Exhibition (*OV*) - - - - 420
Tunbridge Wells Photographic Society 29, 42, 109, 164, 343, 456
Tunbridge Wells Show-up, The - - - - - 401
" " Society Exhibition (*OV*) - - 256
Turnbull, J. M., Film Slides - - - - - - 224
Tweedie, C. R. - - - - - - - - - - 327
Tylar, Wm., Exhibition Goods - - - - - - 299
Tylar's Universal Lantern Slide Printing Frame - 344
Tylee, Charles, "Medal Hunters" - - - - - 341
Tyneside Photographic Society - - - - - 129

U

Unappreciated Secretaries (*OV*) - - - - 442
Underwood, Edwin, Chloride Paper - - - - 365
" The Manipulation of Chloride of Silver Gelatine Paper - - - - - 286
Unmitigated Photographer, The (*OV*) - - - 360
Universal Hand Camera, A - - 4, 20, 53, 299, 323
Uttoxeter Photographic Society - - - - 164, 474

V

Valenta, E., Toning Gelatino-Chloride P. O. P. 12, 22
Van der Weyde, Mr., and Black and White (*OV*) 339
Van der Weyde's (Mr.) Photo. Corrector (*OV*) - 339
Varioscopic Lens - - - - - - - - - 217
Venn, S. E., One good use for Spoilt Plates - - 98
Vevers, C. C., Lantern Slide Carrier - - - 445
Vevers' Second Hand and Job Lot List - - - 327
Villain, A., A New Process for Photo-Dyeing - 391
Virages et Fixages: Traite Historique, Théorique, et Pratique - - - - - - - - 217, 415
Vogel and Ulrich (*OV*) - - - - - - - 184
Vulcanite Sheets - - - - - (*Q*) 334, (*A*) 357

W

Wade, H., Gelatino-Chloride of Silver Printing for Paper and Opals - - - - - - - 24
" J. W., The A. P. Lantern Slide Competition 284
Wagner's Transparent Albumen Colours - - 66
Wain, E. B., Amidol for Lantern Slides - - - 300
" E. B., A Simple Apparatus for making Lantern Slides by Reduction in the Camera by Artificial Light on Daylight - - - - 388
Wakefield Photographic Society - - - 315, 396
Wall, E. J., Photographic Procedure 5, 75, 99, 136, 170, 244, 260, 342
Walsall Photographic Society - - - - - 456
Walton Photographic Society - - - - - 342
Ward, H. Snowden, Photographers' Benevolent Association - - - 283, 342
" " The Benevolent - - 423, 462
" " The Chicago Exhibition - 243
" " The P. B. A. - - - - - 322
Warm Hydro (*OV*) - - - - - - - - - 478
Warning, A. - - - - - - - - - - 242, 258
Warrington Photographic Society 100, 129, 180, 252, 327
Washing Prints - - - - - - - (*Q*) 43, (*A*) 59
Waste Material - - - - - - - - - 151, 170
Watkins, A., Exposure - - - - - - - - 323
" Speed Numbers - - - - - - - 480
Watkins' Exposure Meter - - - - - - 35, 433
Watkinson & Co. - - - - - - - - - 252
Webber's Sensitised Paper - - - - - - - 200
Welford, Walter D., Lantern Slide of Life and Character - - - - - - - - 433
" " Toning of Chloride Prints - 178
Wernhold, Dr., and the Insane (*OV*) - - - 257

PAGE

West Kent Photographic Society - - 276, 414, 437
,, *London Photographic Society* - - 315, 373, 414
,, *Surrey Photographic Society* 276, 316, 356, 437, 474
,, ,, *Society* - - - - - - - - 390
Weston-super-Mare (*A*) - - - - - - - 79
,, ,, ,, *Photographic Society* - - 43
What is Art? (*OV*) - - - - - - - - 400
,, constitutes an Amateur? - - - - 463
,, to do with your Spoilt Negatives - - - 401
Wheeler's Photographic Enlargements (*OV*) - 420
Where we are drifting (*OV*) - - - - - - 420
Whitby - - - - - - - - (*Q*) 43, 59, (*A*) 79
Whiting, Roland, "Clouds" - - - - - - 11
Wigan Photographic Society - - - 202, 316, 437
Wilkinson, E. R., Gloucester - - - - - - 169
,, H., Hydroquinone Development - - 209
,, M. A., A Suggestion - - - - 381
,, ,, Medal Hunters - - - - 341
,, W. Faulkner, Chloride P.O.P. - - 300
Williams, J. N., B.A, Packing of Plates - - - 444
Wilton, S. L., Society for Forest Gate - - - 170
Winter Exhibition (*OV*) - - - - - - 298

PAGE

Winter Photography - - - - - - - 364, 487
,, Work - - - - - - - - - - 479
,, ,, (*OV*) - - - - - - - - 420
Wisbeehian, A., Hunstanton - - - - - - 115
Wolverhampton Photographic Society - 129, 276, 456
Wood James, A Warning - - - - - - - 258
Woodbury, Walter E., Notes on the Permanency of Gelatino-Chloride Prints - - - - - 300
Woolwich Polytechnic - - - - - - - 474
,, ,, Exhibition (*OV*) - - - - 442
Woolwich Polytechnic Photographic Society 29, 202, 437
Woolwich Exhibition (*OV*) - - - - - - 459
Woolwich Photographic Society - - - - 456
Woolwich Societies - - - - - - - - 401
Work with a Hand Camera - - - - - - 471
Working with Spectacle Lenses - - - - - 327
World's Fair, The - - - - - - - - 340
Wormald's Cheap Tripod Stand - - - - - 57
,, Composition Metal Cutting Boards - 453
Wratten's Plates - - - - - - - (*Q*) 14, (*A*) 43
Wright & Co., G., Noxinal - - - - - - 340
Writing on Prints - - - - - (*Q*) 253, (*A*) 277

PAGE

X

Xylonite Well Dish - - - - - - - - 135

Y

Yarmouth - - - - - - - - - - (*A*) 131
,, and Lowestoft - - - - - - - (*A*) 131
Year Book of Photography for 1893, The - - - 471
Yellow Tinge in Platinotype - - (*Q*) 438, (*A*) 491
York Photographic Society - - - 130, 373, 456
Young, Frank, "Bromide Paper" - - - - - 224
"Young Gentlewoman, The" - - - - - - 368

Z

Zeiss' New Lenses (*OV*) - - - - - - - 359
Zermatt - - - - - - - - - - (*Q*) 79
Zinco Engraving - - - - - - - - (*A*) 15

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 404. Vol. XVI.] FRIDAY, JULY 1, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

Our Views.—Photographic Convention Programme—Mr. Popham, of South Shields—A Suggestion—The Amateur Photographer, 1892, Annual Lantern Slide Competition — South London Societies' Exhibition—Special Notice.

Leader.—Holidays with the Camera.

Letters.—The New Clasp (Prize Winner)—Hints to Beginners (Novocastriensis) — The Blister Fiend (P.)—Universal Hand-Camera (H. E. H.)—How Long Will Dry Plates Keep?—J. H. Jackson).

Apparatus. — The "Sandell" Plate — The Eastman Gelatino-Chloride Paper—The Varden Stand—Powell's Compressed Toning-Baths.

Catalogues.—Fallowfield's Annual.

Articles.—Photographic Procedure (Wall) — Elementary Photography (Hodges)—The Lantern, and How to Use It (Norton)—A Holiday in Norway—Clouds (R. Whiting)—Toning Gelatino-Chloride Printing-Out Paper (Valenta).

Societies' Meetings.—Brixton and Clapham—Hackney—Holborn—Hove—Liverpool — North London—South London — Spen Valley.

Holiday Resorts.—Salisbury (T. Perkins, M.A.).

Queries and Answers.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months, 5s. 6d.	Twelve Months, 10s. 10d.	
Postal Union	" " 6s. 6d.	" " 13s. 0d.	
Out of Postal Union ..	" " 7s. 9d.	" " 15s. 8d	

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition No. 38.—"Inland Scenery With or Without Figures." Latest day, July 25th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in Amateur Photographer Supplement, August 19th.)

We have received an advanced copy of a pamphlet issued by the Photographic Convention, containing details of the excursions and the general programme, with the list of hotels and their tariffs.

The Convention will be opened on Monday, July 11th, at 6.30 p.m., with a reception by the President, Mr. Geo. Davison, in the hall of the Royal Scottish Geographical Society, Queen Street, Edinburgh. The presidential address will be delivered at 7.30 p.m., to be followed by a lantern exhibition. Tuesday will be devoted to an excursion to Melrose and Dryburgh. On Wednesday there will be the general meeting; the usual photographing of the Convention group in the morning, and the afternoon and evening to the reading of papers.

On Thursday there will be an excursion to St. Andrew's and Dunfermline, and in the evening more papers. On Friday excursions to Dalmeny and Cramond Bridge, Roslin and Hawthornden, and a dinner and smoking concert in the evening. Saturday sees the close of the gathering with a council meeting.

The papers to be read are as follows:—

"Individuality in Photography," by H. P. Robinson.
"The Art of Photography in Relation to Painting," by A. Burchett.
"Amateur Photography in America," by Miss Catherine Weed Barnes.
"Orthochromatic Photography," by C. H. Bothamley.
"Photography in Relation to Medical Record and Demonstration," by A. Pringle.
"On the Training of Photographers," by E. A. Howard Farmer. A paper from W. R. Burton.
"The Use of the Colour Screen in Landscape Photography," by C. L. Mitchell, M.D.
"Direct Silhouette Portraiture" (with lantern illustration), by J. Cox Cox.
"How to Look at Photographs," by F. M. Sutcliffe.

Mr. Popham, of South Shields, sends us the following letter with regard to our remarks on his print in our last issue:—

"Allow me to again state that my print was a faithful representation of the sunrise of March 29th, at 6 a.m. The presence of two eye-witnesses, and the impressions of two negatives, are to my mind undoubted testimony against the declaration of one who admits he was not at South Shields on March 29th, at 6 a.m. The knowledge of having one's print rejected in the first round is easily accounted for by the prejudice which exists against sunrise effects; for I find there were more sent in than mine. Might I ask you if it is a photographic sin to attempt to photograph a sunrise? Surely, if it is, photography has poor claims to become a fine art."

As Mr. Popham still maintains that it is a faithful representation of a sunrise, we can only say it was a very curious

one and well worth photographing as an unusual phenomenon. As to the print being thrown out from prejudice, we may assure our correspondent that two judges are hardly likely to throw a print out for this reason in our presence. This is bringing an unwarranted and insulting charge against the good faith of our judges and ourselves.

It is not a photographic sin to photograph a sunrise, but it is a photographic sin to make the print lie by over-printing. Our own impression, from an examination of the print, is that the negative was developed with too much reducing agent and bromide, and therefore to obtain detail in the white clouds the print was over-printed, and thus the true rendering of the scene destroyed.

A CORRESPONDENT writes suggesting a slight alteration with regard to our competitions, viz., to the effect that we should limit our competitions to one particular plate, one lens, one kind of printing-paper, giving each a turn. As all announcements had been made with regard to this year's competitions, we cannot see our way clear to institute this change this year, but we think the idea well worth considering for next year.

The 1892 AMATEUR PHOTOGRAPHER Annual Lantern Slide Competition will close on September 30th, and the following are the classes and prizes :—

CLASS I. LANDSCAPE, SEASCAPE, AND RIVER SCENERY, with or without figures.

First Prize	Gold Medal.
Second Prize	Silver Medal.
Third Prize	Bronze Medal.

CLASS II. PORTRAITURE AND FIGURE STUDIES.

First Prize	Gold Medal.
Second Prize	Silver Medal.
Third Prize	Bronze Medal.

CLASS III. ARCHITECTURE, interior or exterior.

First Prize	Gold Medal.
Second Prize	Silver Medal.
Third Prize	Bronze Medal.

CLASS IV. INSTANTANEOUS WORK, limited to slides from 5 by 4 negatives and under.

First Prize	Gold Medal.
Second Prize	Silver medal.
Third Prize	Bronze Medal.

Certificates will also be placed at the disposal of the judges.

Entry forms and conditions, etc., will be ready in the course of the next fortnight, and may be obtained on forwarding stamped directed envelope.

THE photographic societies in the Metropolitan district south of the Thames propose to hold an exhibition in November, and the Committee of the South London Photographic Society offer for competition by members of the South Metropolitan Photographic Societies, at their Exhibition, to be held in November, 1892, the following medals: —Silver medal for the best photograph shown (irrespective of size); bronze medal for the second best ditto; silver medal for the best set of six lantern slides; bronze medal for the second best ditto. Entrance fee payable only by non-members of the South London Photographic Society, 2s. 6d. each competitor.

RULES FOR COMPETITION.

1. The term "Photograph" used in these rules shall include photographic productions of all kinds.

2. Photographs for competition at the Exhibition shall be from negatives taken since the date the competitor was elected a *bona fide* member of one of the South Metropolitan Photographic Societies.

3. Not less than six photographs shall constitute an exhibit.

4. Exhibits for competition should bear the title and name of the competitor on the front, lantern slides and transparencies excepted. Names of competitors will be covered during judging.

5. Oxford frames will be excluded.

6. Lantern slides must be 3¼ inches square, properly mounted and marked, so that the name of the subject or title shall be seen at the top on the face of the slide when looked at in its correct position.

7. The Committee shall have power to reject any exhibit which may appear to them unsuitable or in contravention of the rules.

8. The judges shall be appointed by the Committee.

9. The decision of the judges to be final.

10. The term "South Metropolitan Photographic Society" includes any Photographic Society whose meeting place is situated within the South London Postal District.

11. Any member of the South London Photographic Society who is successful in obtaining an award shall present a copy of the photograph to the society's album.

12. In the classes open to members of the South London Photographic Society only photographs from negatives taken since the competitor was elected a member of the society, are eligible, provided that the same have not been exhibited for competition at any of the society's previous exhibitions, and no member shall receive more than one award in those classes.

13. The Committee will arrange for every care to be taken of the photographs, but they will not hold themselves responsible for any loss or damage which may occur to them. Ten per cent. commission will be payable to the society on the price of all photographs sold during the exhibition.

The date and place of exhibition will be announced shortly. Entry forms can be obtained from the Secretaries of any of the South Metropolitan Photographic Societies, or of the Hon. Secretary, Chas. H. Oakden, 51, Melbourne Grove, East Dulwich, S.E.

WE wish to draw the attention of our readers to the following announcement :—

In no case will the Proprietors of the AMATEUR PHOTOGRAPHER undertake to buy or sell any goods on commission, nor will they be responsible for the safety of any negatives or prints sent to the Editor of the AMATEUR PHOTOGRAPHER for any purpose whatever, although all reasonable care will be taken of the same.

The Editor claims the right of refusing any print, lantern slide, etc., sent in for competition, without assigning any reason for such refusal.

HOLIDAYS WITH THE CAMERA.

To many of our readers the summer holidays are the only period in the year at which they can devote as much time as they like in the daytime to photography, so that in many cases the deciding question becomes where to go, so that renewed health may be obtained with also a renewed stock of negatives.

To some of us the claims of our family require to be considered, and the sea-side, if chosen, as it is by many, will give us numerous chances of beach scenes, clouds, and shipping. We may, once for all, dismiss beach scenes, and say that they are, as a rule, extremely disappointing, and bear a striking resemblance one to another. It is true that to the hand-camera man they present great opportunities to obtain snap-shots, but one gets very tired of the interminable children paddling, or building sand-castles, etc., and it is rare to see any real artistic merit in them.

High water is, as a rule, not the best time to make pictures. Choose low tide, especially at any place where fishing is carried on; and many a charming picture may be obtained by judicious selection—the faint ripples, the ripple-

marked sand, and the reflection of a boat are all of value, and, perhaps, an attendant fisherman or two may lend life and interest to the print.

In all cases, however, avoid too much posing. And on this point we can recommend the suggestion made by one of our contributors, Mr. J. A. Hodges, who showed us some charming results obtained this month at the sea-side. On examining his negatives we were much struck by the absolute unconsciousness of the fishermen in most of them, and he said, "Yes; in most cases they were ignorant of my taking them, as I used only one combination of my rectilinear, and, therefore, did not have to get so near them." In all work of this kind it is advisable to use one combination of a doublet, or else a long-focus lens, and we may state that it is worth while purchasing a long-focus single lens for this purpose. In using a rectilinear, the usual advice is to unscrew the front combination and use the back only; but many cameras will not rack out sufficiently far to allow this to be done. Equally good results can be obtained by unscrewing the back combination, and using the front *in situ*, the extra length of tube being quite sufficient to enable the lens to be thus used. Using half a lens in this manner, it must not be forgotten that as the equivalent focus is doubled the aperture of the diaphragm is halved, and therefore the exposure increased to four times.

Another question on which doubtless many of our readers will look for help is with regard to shutters. "What is the best instantaneous shutter for seaside work?" someone will ask. Well, for ordinary work, a shutter which does not work quicker than 1-30th of a second will be quite rapid enough, and Mr. Hodges had a note on this very subject, in our issue of June 17th, page 467, and certainly from an examination of his negatives they fully bear out this recommendation. It is true that we may sometimes require a shutter which should work at a quicker speed, for instance, in taking a shot at a yacht coming in on a stiff breeze, with every stitch of canvas set, then perhaps 1-100th of a second may be required, but we shall want her heeling over, and throwing up some spray, or else we shall get no idea of motion. This reminds us, too, how careless some amateurs are with regard to instantaneous work. Many will take up their position regardless of the position of the sun. Last year we were at the sea-side and we wanted to take a small yacht coming in on the top of the tide, with a fair breeze, and the only place easily getatable was the end of a small pier; when we got there we found we should be on the shadow side of the boat, so had to walk two hundred yards, take a boat across the river mouth, climb over some rough ground and up some wooden piles at some risk, and then managed to get a good result by lying flat on the top of the piles, and holding the camera firmly in front of us. Always be careful that in very quick work you do not get on the shadow side of the object to be taken.

The question of plates is another crux. A query often asked is, "Are So-and-so's ordinary plates quick enough for sea-side work?" Probably they are quick enough, and yet we venture to think they are too slow. The light, as a rule, at the sea-side is always more actinic than inland, where we have smoke, etc., to take off the power, and then there is so much more sky in our pictures, as a rule, and fewer heavy shadows that one can use a slower plate if thought desirable. But is it desirable? We think not; we should prefer a rapid plate, and, if necessary, stop down our lens, or use a more rapid shutter to compensate for the increased sensitiveness. The greater sensitiveness is a power which it is as well to have in reserve, we need not use it unless we like, but still it is there if we want it.

Having considered these points, the natural sequence is How shall we develop our exposed plates? If they have been exposed on shipping, or any subject in which fine portions like cordage, ropes, etc., appear against a bright sky, then it is advisable to apply a developer of full strength so as to avoid what is called halation, which in many cases is sideways extension, or creeping of the deposition of the metallic image, in consequence of slow development. For this class of work, plain pyro and ammonia is still our favourite. Hydroquinone gives rise too often to chalkiness in the high lights, and eikonogen is less under control, though far more preferable than hydroquinone and more preferable than pyro, sulphite, and the fixed alkalies, potash, or soda. If a plain pyro developer with full strength ammonia be used, the negatives will develop up quickly without undue contrast, and more often than not with clouds showing, if any were about at the time of exposure. Thin, soft, and delicate negatives are far preferable to denser ones, and we have a strong leaning to yellow negatives, that is negatives developed with plain pyro, uncleared and fixed in a neutral and not an acid fixing bath. Yellow negatives are far better printers than black and white ones, or, as the Germans say, the colour of the image "deckt gut," a comprehensive term, and for which we have in English no equivalent.

Our final note must be as to clouds. At least a dozen plates should be devoted to studies of the clouds in the daytime, and if any energy is inherent, a few sunrises will well repay the trouble of getting up, but one must be careful not to spoil these by over-printing, as so often seen in our competitions. Don't descend to clap-trap in photography. By clap-trap we mean under-exposing plates, over-printing in order to get startling nocturnes in black and white, which though effective at first sight, will on further examination at once reveal all false values and results utterly untrue to nature. Photography, unfortunately, cannot help lying in some particulars, but we need not make it lie worse than ever.

Letters to the Editor.

THE NEW CLASP.

SIR,—With regard to your intention to award an extra clasp to the medals (or ribbons) of past prize-winners, will you permit me to express my opinion upon it. I consider the idea both novel and excellent. I have your Monthly Bronze Medal and two of your certificates, and as hitherto I have been unable to obtain the Monthly Silver Medal, I will hail with pleasure any extra clasp I should be lucky enough to obtain. It will certainly be almost as good as a medal. Hope some of your other prize-winners will express their views. I shall try for one of these new decorations in next month's competition, but of course would prefer a Silver!—Yours truly, PRIZE-WINNER.

* * * *

HINTS TO BEGINNERS.

SIR,—Absence from home has prevented my seeing your issue of the 3rd inst, otherwise I would have replied sooner to Mr. Forret's kind criticism of my paper under the above heading. As a "mere amateur" I am only too glad to learn all I can; and, as Mr. Forret considers some of my statements as rather misleading, I shall be very glad if he will point them out, as, not only I do not wish to lead others astray, but it is not at all improbable that I may, myself, have been in the wrong track; consequently, I look forward with interest to that gentleman's next communication.

As regards the point he especially criticises, his second construction correctly defines what I wished to express, and I am very sorry if my assertion was at all indefinite. I wished to impress on amateurs the necessity of filtering the hypo solution for two reasons—the unequal density of a long-standing solution, and the very frequent occurrence of foreign matter among the crystals of hypo. I am glad to learn that *photographically* this unequal density is of little importance as far as regards hypo, but I have

had an unpleasant experience as regards chloride of gold; when using the last of a solution of 1 gr. to the dram, my prints toned with such violent rapidity that half of the batch was spoilt, and this, I was told by the dealer who supplied the gold, was in consequence of the last of the solution, which had stood some time, being much more dense than that previously used—than the upper layers, in fact. With regard to the expression "large handful," that referred to preparing the fixing solution for prints, and which I acknowledged at the time to be somewhat a "rough and ready" means of compounding the bath. However, the "proof of the pudding is in the eating," and I have three prints which were inadvertently left in a damp outhouse last winter, two by professionals and one of my own doing; one of the professionals' work was extremely discoloured, the other was very much spotted, while my work was not harmed in the least, except that the mount was a little soiled. I shall, if you wish it, be most happy to leave them with you for Mr. Forret's inspection when I next am in London.—Yours, etc., NOVOCASTRIENSIS.

[Our correspondent has called upon us and left some prints with us, amongst them one only of his which shows one small patch of fading, but this may be due to the mounting board—ED.]

* * * *

THE BLISTER FIEND.

SIR,—Allow me to protest against the treatment proposed by your correspondent "John Browning," for the prevention of blisters on silver prints. I have tried the experiment, with the result that I have twenty prints which can claim no better place than the waste-paper basket. The prints would lead one to think they were all printed from flat negatives, which is not the case, presenting a washed-out appearance, and some of them came out of the toning bath with untoned spots and patches over them, a thing which I very rarely experience, as I am most particular about keeping my prints away from anything that may convey grease to their surface.—Yours, etc., P.

* * * *

UNIVERSAL HAND CAMERA.

SIR,—In Major Bruno's articles on a universal hand camera, at p. 489 of your issue of June 24th, he tells his readers how to construct a finder with a bi-concave lens and a mirror (at 45°) to be used by looking down through the top of it.

But surely the image, as viewed at G fig. 10 will not be, as he tells us, "the right way up," unless the operator turns his back towards the view taken.

This might be useful with inquisitive crowds, as has, before now, been suggested.

As to the greater brightness of the imago, and that considerable advantage over the ordinary ground-glass affair, with bi-convex lens and mirror, there can be no doubt, and I should be very grateful to the author of these articles if he can modify his arrangement so as really to see the view "the right way up" when looking down on G.

As he has it arranged at present, the view will be inverted, as on the ground-glass of an ordinary camera.

A second mirror could, of course, be easily arranged over his sunk finder, so as to give an erect image when the operator looks directly towards the view; but as that second mirror would have to project above the top of the camera, it would be simpler to put the bi-concave lens there: hinged to fold down flush, and to look through it in a horizontal direction as in the common bi-concave finders, without any mirrors at all.

But neither of these two latter methods admits of using a sunk finder by looking down on it, which, for many purposes, is the most convenient position.—Yours, etc, H. E. H.

* * * *

HOW LONG WILL DRY PLATES KEEP?

SIR,—Prior to Whitsuntide of 1867 (twenty-five years since) I purchased from the Liverpool Dry Plate Co. a stock of their collodio bromide plates to take with me on a visit to the English lakes. Having exposed a number of them with more or less success, on my return home I had a few left, and not doing anything in photography for some time after they got put away, and lost sight of. Since then they have been tumbled about in three houses, from basement to attic or lumber room, and coming upon them the other day I thought I would expose a plate and see if they had any life left in them.

I gave a long exposure on a view from an upper window and forgetting the exact mode of development recommended at the time for them, I used pyro and ammonia, and to my surprise produced a rather unsightly, but fair printing negative. I enclose you the negative and a print from it for your inspection as I think it may be interesting to you and the readers of the AMATEUR PHOTOGRAPHER.

The Liverpool dry plates were about the first commercial plates put on the market, the worker in dry-plate photography having prior to their advent to prepare his plates himself from the many and varied formula from time to time published.

The Liverpool plates used to take about three times the exposure of wet plates under the most favourable circumstances, and for masses of dark green woods took often five or six minutes. The film had to be varnished round the edge to prevent blistering and stripping off during development. They were backed with a red coloured water paint to prevent halation, and, of course, this had first to be carefully washed off prior to development.—Yours, etc., J. H. JACKSON.

[The print sent by our correspondent is far superior to many that we get in our competitions from the modern dry plates, and speaks well for the keeping power of the plates.—ED.]

Apparatus.

THE "SANDELL" PLATE.

R. W. Thomas and Co., of 10, Pall Mall, London, W., have sent us a sample of the plates they have introduced under the above-named title. The plates are coated with two or more films of emulsions of different degrees of sensitiveness, the idea being expressed by the makers as follows:—"It will be readily perceived that their construction, whilst perfectly obstructing the passage of reflected light from the glass or support to the most sensitive film, thus preventing halation, effects another object, and this is an important one—it allows a latitude in exposure altogether impossible for any single film, for one is able to give an exposure in which the sensitive salt in the upper film or films is absolutely solarised or reversed, whilst a perfect image may still be secured in the lower strata."

These plates have certainly given us some good results under very trying conditions, but not when developed in the usual manner. For instance, when exposing on a brilliant sun-lit view for four times the normal exposure, we found on applying a developer of full strength pyro and ammonia that the negative was flat and foggy, whereas another plate exposed on the same view under identical conditions gave when developed with a well restrained pyro developer weak in ammonia (one-fourth of the normal quantity) a brilliant plucky negative. The makers recommend that "when the image rushes up and the shadows become all obscured, development may still be continued with the normal developer; in this case, after fixing, it will be found probably necessary to clear the negative," and suggest Howard Farmer's ferridcyanide reducer. In our hands, however, this has not given us such good results as by the reduction of accelerator.

With regard to halation, we think the plates certainly score as severe trials on opal globes surrounding a bright gas flame gave us no halation with an exposure which was four times longer than was required to produce marked halation on their ordinary plates. In photographing barges also on the Thames we were able to obtain all the cordage most distinctly and clearly outlined with no trace of halation with two seconds' exposure in bright sunlight against a very bright sky. In cases where halation is to be expected these plates should prove useful, and it is to be regretted that their price is so high, viz.:—

Quarter-plates	..	..	2s. 3d. and 3s.
Half-plates	..	..	4s. 9d. „ 7s.
Whole-plates	..	..	8s. 9d. „ 13s.

The plates are made in two kinds, "General" for ordinary work and "Especial" for very trying subjects. The speed of the plates is said to be "Sens No. 28° W," but in our hands they do not seem to be quite so rapid as some other plates, not even so sensitive as Thomas' Cyclist. But on this point our experiments do not enable us to speak with any certainty.

THE EASTMAN GELATINO-CHLORIDE PAPER

The Eastman Photographic Materials Company, of 115, Oxford Street, W., have introduced a new form of gelatino-chloride paper, which they claim to be the result of "experiments

which have been conducted with the greatest possible care with a view of eliminating some of the difficulties and uncertainties which have heretofore been absolutely inseparable from the manufacture of printing-out papers." And judging from the samples sent us which we have tried during this last week the paper is of first-rate quality and singularly free from blemishes and defects. It is as rapid as any chloride paper in the market, and there seems to be rather less loss of depth than usual. With the usual formulæ it works excellently. The special toning bath recommended is as follows :—

COMBINED TONING AND FIXING BATH.

No. 1—ALUM AND HYPO SOLUTION.

Hyposulphite of soda	8 oz.
Alum	6 „
Water	64 „

When dissolved add to above 3 oz. carbonate of soda, dissolved in 8 oz. of water. (This must be added very carefully on account of the effervescence which takes place.)

Allow to stand twenty-four hours, then decant the clear liquid.

No. 2—GOLD SOLUTION.

Chloride of gold	15 gr.
Acetate of lead (sugar of lead)...	64 „
Water	8 oz.

To make the toning bath :

Take of No. 1 solution	8 oz.
Take of No. 2 solution	1 „

After printing immerse without previously washing in the above toning bath until the desired tone is obtained.

The above solutions will keep any length of time.

When toned transfer the prints to the washing-tray, giving at least one hour and a half's thorough washing in several changes of water.

Should any other formula be used for toning, the prints, when toned, must be washed in two or three changes of water, and then fixed in a bath of hyposulphite of soda of the following strength :—

Hyposulphite of soda	3 oz.
Water	1 pint.

A special feature and a very convenient one is the packing of the paper cut to the regulation sizes in 1s. packets, so that no matter what size negative is used one can always obtain a shilling's worth of this paper, which will be of great service to those of our readers who wish to obtain a few prints without investing in a lot of uncut sheets. It may also be obtained in full-size sheets 24½ by 17 ; price 15s. per quire.

THE VARDEN STAND.

Mr. E. Varden, of Boundary Road, Notting Hill, W., has submitted for our notice one of his tripod stands. It is extremely light and rigid, and has sliding legs adjustable to any height or uneven ground. The head is mahogany, covered with cloth, and at the reasonable price of 12s. 6d., the stand should find many friends.

POWELL'S COMPRESSED TONING BATHS.

T. H. Powell, of 116, Denmark Hill, London, S.E., has forwarded us a sample of his compressed gold and platinum toning baths. They have given us very fine tones on albumen and gelatino-chloride prints, and judging from the time we have had them under our notice, they possess, when dissolved ready for use, good keeping powers. Many of our readers will warmly welcome this novelty, as the contents of a tube (two of which are sold for 1s.), have merely to be dissolved in half a pint of water to be immediately ready for use. We have toned sixteen half-plate prints in one bath without exhausting the gold.

Catalogues.

Fallowfield's Photographic Annual. Price 1s.

Jonathan Fallowfield, of 146, Charing Cross Road, has sent us a copy of his encyclopedic price list, which this year runs up to 592 pages. Every requisite that the most enthusiastic worker may require is here quoted for, and in many cases illustrated. The very latest novelties are included, and the work is an absolutely necessary reference book for any amateur.

Photographic Procedure.

By E. J. WALL,

Author of the "Dictionary of Photography."

SECTION V.

THE SENSITIVE MEDIUM AND ITS SUPPORT.

(*Continued from p.* 451.)

In 1869 Taylor (*Photographic News*, 1889, p. 19), suggested the use of a photometer, which has also been used as a sensitometer, consisting of a small box containing ten tubes, one end of which was bored with a certain number of holes, viz., 3, 4, 5, 6, 8, 10, 13, 16, 20, and 25, the increasing number of holes, admitting, of course, an increasing amount of light, which acted on the sensitive surface.

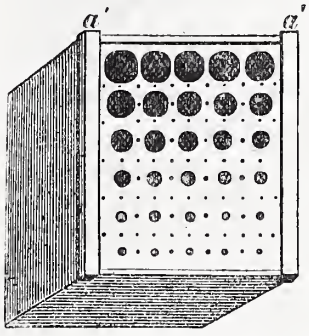


FIG. 123.

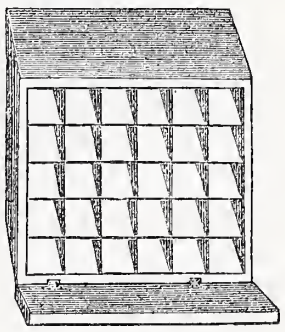


FIG. 124.

In 1881, Mucklow and Spurge introduced their sensitometer, which is shown in figs. 123, 124, and 125, and it consists of a box with chambers, one end of which is closed by an opaque plate perforated by holes of given diameters, a numbered plate is at the other, and behind this number tablet, a sensitive plate is exposed, and on development would show a certain number, which can be used for comparison with that furnished by a different plate. The intensity of the light being proportional to the square of the diameter of the holes.

1	2	3	4	5
10	9	8	7	6
11	12	13	14	15
20	19	18	17	16
21	22	23	24	25
30	29	28	27	26

FIG. 125.

At the Camera Club Conference held in March last, an improvement on the above instrument was suggested by Mr. J. B. Spurge, which "consists in the re-arrangement of the chambers which now partake somewhat of the nature of magic squares :—

DIAGRAM OF INSTRUMENT.

Areas	31	39	50	63	79	100	Largest
Ratios	3·7	2·52	2	1·6	1·26	1	Aperture.
	7·8	9·9	12.5	15	19	25	
	12·7	10	8	6·35	5·03	4	
	1·96	2·48	3.12	3·93	4·96	6·25	
	50	40	32	25	20	16	
Smallest	·492	·620	·781	·984	1·24	1·56	
Aperture.	202	160	128	101	80	64	

These considered vertically downwards receive quarter the exposure of those immediately above, and correspondingly four times of those below. When diagonally considered, those upwards and towards the right receive

approximately five times, and conversely when downwards and to the left, 1-5th the exposure. Diagonally upwards, and to the left approximately three times, and downwards towards the right, 1-3rd. A ready means is now afforded of seeing at a glance the effect of exposures, all bearing a geometric relationship, and of four different ratios to one another. This upon one quarter-plate, thus rendering it a portable and exact instrument for general work.

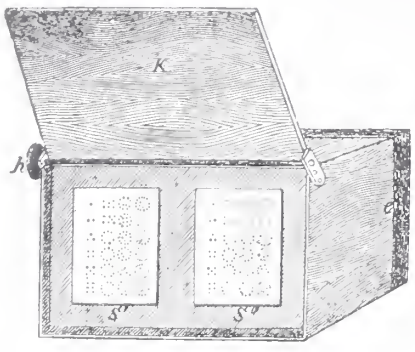


FIG. 126.

Dr. Vogel uses a sensitometer constructed much after Taylor's, and as shown in fig. 126, consists of two chambers placed side by side with a movable cover. To use this, two plates, the sensitiveness of which it is desired to compare are placed side by side in the sensitometer, and the same exposed to a screen of white paper, illuminated by skylight, at some distance from an open window as shown in fig. 127.

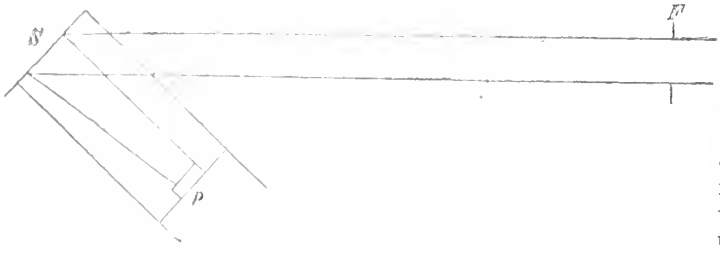


FIG. 127.

F being the window, S the screen, and P the plates in the sensitometer, which is fastened at a distance of 1 metre (39·37 in.) from the screen, which measures 40 cm. square (16 sq. in.) as in fig. 128.

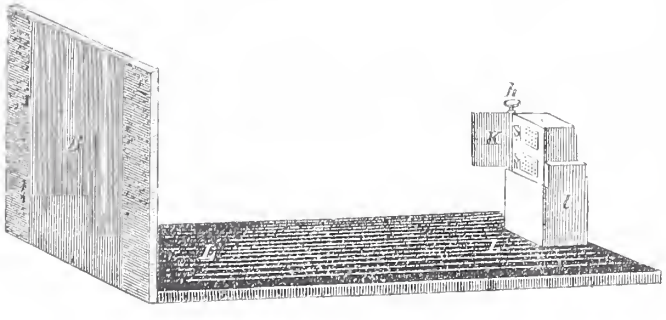


FIG. 128.

The front of the sensitometer is pierced, as will be seen with two sets of holes from one to twenty-four, and a numbered tablet is just in front of the sensitive plate, and the exposed plates are developed and fixed together. The sensitiveness of the plates is directly proportional to the different numbers; for instance, a plate showing twelve is twice as sensitive as one showing six.

(To be continued.)

Elementary Photography.

By JOHN A. HODGES.

CHAPTER XXII.

ISOCHROMATIC OR COLOUR-SENSITIVE PHOTOGRAPHY.

Isochromatic Plates—Their Advantages—How Prepared—Dipping Process—Emulsion Process—Tailfer's Patent—Edwards' Isochromatic Plates—Further Improvements Desirable—Special Advantages—Necessity for Manipulating in Ruby Light—Further Precautions—Development—The Use of "Screens"—A Useful Experiment—Photographing Skies—Length of Exposure with Screens.

IT will soon become apparent, to even the most unobservant reader, that photography does not with even approximate accuracy reproduce the true gradations of light and shade, nor render in monochrome colours according to their proper value. Ordinary plates are almost insensitive to red, scarcely more so to orange and yellow, and reproduce most greens badly, at the same time being unduly sensitive to blue and violet. Chemists, recognising this shortcoming of photography, have long turned their attention to the production of plates which shall be more equally sensitive to the various colours of the spectrum, and the result of their investigations has been the introduction of what are known as isochromatic or orthochromatic plates. The terms are practically synonymous, and signify equal or true rendering of colour. It would be beyond the scope of a practical and elementary guide-book to go into the history of the process here, or to describe its nature, except in the briefest possible manner. Fortunately for the amateur, isochromatic plates are now an article of commerce, therefore it will not be necessary for the reader, from a practical point of view, to trouble himself with any details of their manufacture. They may be produced in two ways, first, by dipping, or bathing, ordinary plates in a solution of erythrosine, one of the very numerous coal-tar derivatives; plates so prepared, however, will not retain their keeping qualities, and therefore must be used directly after being prepared. The alternative method is due to M. Tailfer, a Frenchman, and is the subject of a patent; and Mr. Edwards's isochromatic plates, produced under licence by this process, have acquired a well-deserved reputation for their uniform reliability and excellence. I have used isochromatic plates from the time of their introduction, and for most purposes I consider they are far superior to ordinary plates. Photographers generally, however, have until recently been slow to adopt them, or to recognise their advantages; one probable reason for this I shall refer to later. So very much better are they than ordinary plates that I have not the least hesitation in expressing the opinion that the day is not very far distant when colour-sensitive plates will be almost exclusively used, and the fact that quite recently one of the largest firms of plate-makers have considered it worth their while, as a business speculation, to purchase the right of making such plates from Messrs. Edwards, is strong evidence of the correctness of the assertion. Finality, however, in the preparation of colour-sensitive plates is very far from being reached, and several gentlemen who have devoted much attention to the investigation of the subject are still hard at work in this direction.

From a practical point of view isochromatic plates may be regarded as superior to ordinary plates for the following special purposes: copying oil or water-colour paintings and coloured diagrams, landscape work generally in which green or yellowish green is the prevailing colour, and more particularly when the foliage has assumed the brown and yellow tints of autumn; they also render clouds better and more truthfully than do ordinary plates, while portraits taken upon them require less work from the retoucher's pencil.

W. WATSON & SONS, 313, HIGH HOLBORN, LONDON,

HAVE RECENTLY BEEN AWARDED

At the **AMSTERDAM** PHOTO EXHIBITION, 1891—THE **MEDAL** OF THE SOCIETY

At the **GLASGOW** PHOTO EXHIBITION, 1891—THE **MEDAL** OF THE SOCIETY.

At the **ANTWERP** INTERNATIONAL MICROSCOPIC EXHIBITION, 1891—TWO DIPLOMAS OF **HONOUR** (Degree above Gold Medals).

At **BUDAPESTH**—THE **GOLD MEDAL** OF THE PHOTOGRAPHIC SOCIETY.

Making 27 awards for the excellence of their Instruments, including Paris Universal Exhibition, 1889 (2 Gold), London, Liverpool Melbourne, etc.

W. WATSON & SONS believe they are the largest Manufacturers of High-class Photographic Instruments in Europe, and intending Purchasers can be allowed at any time to inspect their Steam Factories, which are close to their Warehouse, and judge for themselves as to the quality of Material used and the care bestowed on the Manufacture of their Goods, which W. & S. are confident is elsewhere unequalled. *Testimonials as to the efficiency of their Instruments are received almost daily.*

Watson's "Acme" Camera.
Unsurpassed for Outdoor use.

Watson's "Premier" Cameras.
For Professional use, *Indoor or Out.*

Watson's Studio Cameras, Tripods, Enlarging Lanterns, etc.

Sensitized Albumenized Paper.
The Best White or Rose. Per quire, 13s.; half quire, 6s. 6d.; quarter quire, 3s. 6d. Single sheet, 10d., post free.

Watson's "Detective" Hand Camera.

Watson's Rapid Rectilinear Lenses.

Watson's Wide Angle and Single Landscape Lenses.

All Cameras and Lenses may now, at an advanced cost, have the Metal parts made in Aluminium.

Sensitized Matt-Surface Paper.
Exceedingly popular. Yields most artistic results. Per quire, 13s half quire, 6s. 6d.; quarter quire, 3s. 6d. Single sheet, 10d., post free

AN ILLUSTRATED CATALOGUE OF CAMERAS, LENSES, AND APPARATUS SENT FREE TO ANY ADDRESS ON APPLICATION. Established 1837.

— AND AT MELBOURNE, AUSTRALIA—251, SWANSTON STREET. —

STEAM FACTORIES: 9, 10, 11, 16, and 17, FULWOOD'S RENTS, HOLBORN.

Wratten & Wainwright's
CELEBRATED
"LONDON" PLATES,

"ORDINARY" (15°). For Landscapes, Copying, and Transparencies.

"INSTANTANEOUS" (19°). For Studio and General Work.

"DROP-SHUTTER SPECIAL (24°). For Dull Weather and Hand Cameras. The most rapid Plate made.

Have been manufactured continuously for fifteen years, and have never yet been approached in quality. They are recognised by the most competent authorities as the standard by which all other Plates are judged. These Plates are indispensable for the production of Exhibition Pictures. More High Class Medals have been secured by results on the "London" Plates than all others combined.

Wratten & Wainwright's
SENSITIZED PAPER

HAS THE LARGEST SALE AND HIGHEST REPUTATION, KEEPS WELL, TONES EASILY, AND **DOES NOT BLISTER.**

Post Free—per Quire, 13/6; Half-quire, 7/-; Quarter-quire, 4/-; 3 Sheets, 2/3; Sample Sheet 10d.
Cut Sizes, 1/- per Quire extra.

APPARATUS, CHEMICALS, ETC., OF THE BEST QUALITY ONLY, AT LOWEST MARKET PRICES.
Catalogues and Estimates Free.

WRATTEN & WAINWRIGHT, 38, Great Queen Street, Long Acre, London, W.C.

TELEPHONE No. 2776. TELEGRAPHIC ADDRESS: "WRATTEN, LONDON."

E. G. WOOD, Optician,

74, CHEAPSIDE, & 416, STRAND, LONDON.

WOOD'S BEST QUALITY CAMERA.—Double Extension, Turntable, 4-fold Stand, and Three Double Backs. Best Workmanship throughout, ½-plate, £8 8s.

WOOD'S ENGLISH LENSES for Landscapes, Portraits, or Architecture. Carefully Corrected, Centred, and Mounted.

	Focus.	Rapid Rectilinear. Water. Diaph.	Iris Diaph.	Wide Angle. Focus.	
4½ by 3½	5 in.	£2 15 0	£3 5 0	3 in.	£3 0 0
6½ „ 4¾	7 in.	3 10 0	4 4 0	4 in.	4 0 0
8½ „ 6½	11 in.	5 5 0	6 6 0	5 in.	5 0 0

COMPLETE SETS OF APPARATUS, including Best Camera, English Rapid Rectilinear Lens, 4-fold Stand, Leather Case, and Materials, etc., all of the best quality.

¼-plate, £14 10 0 ½-plate, £18 10 0 1-plate, £28 10 0

"A PHOTOGRAPH, AND HOW TO TAKE IT," WITH CATALOGUE GRATIS. POST FREE, ONE STAMP.

ELLIOTT & SON'S

'TYPICALLY PERFECT'

ORDINARY

AND

EXTRA RAPID

'BARNET'

PLATES.

OF ALL LEADING DEALERS, OR DIRECT FROM THE WORKS,

BARNET, HERTS.

W. WRAY, MANUFACTURER OF PHOTOGRAPHIC LENSES.

PRICE LIST FREE.

Illustrated Catalogue of Telescopes, Microscopes, etc., for stamp.

NORTH HILL, HIGHGATE, LONDON, N.



PYRO "DEVELOPOIDS."

A 1s. bottle may be carried in the waistcoat pocket, and will develop six dozen plates. Invaluable when travelling and at all times. Sold everywhere.

Sole Maker—

T. H POWELL,

116, DENMARK HILL, LONDON, S.E.

Sole Agents—MARION & CO., 22 & 23, Soho Sq., London, W.

Powell's "SHUTTER" Developer, for all rapid exposures, 1s. 6d.

"The Amateur Photographer."

Binding Cases	1/6
Reading „	2/
Volumes	7/6

Post free of the Publishers.

The one drawback to the use of isochromatic plates, if such it can be said to be, lies in the fact that they can only be safely manipulated in light of *a deep ruby colour*, and to a disregard of this precaution a good many failures are readily attributable. It needs very little reflection to demonstrate that a plate which is capable of accurately rendering orange and yellow cannot safely be manipulated in a light of that hue. Ruby light only, and that of a proper character, should be employed. It is better not to expose the plates unnecessarily to even ruby light, and in filling the dark-slides it is well to get as far from the light as possible. During development a light wood or cardboard cover should be placed over the dish until the image is well out.

In regard to the actual development of isochromatic plates, their treatment does not essentially differ from that applicable to ordinary plates, only that with those of Edwards's make it is very easy to secure density, so that with subjects showing much contrast less pyro is necessary.

The makers, in their instructions, advise the use of the fixed alkalis, either the carbonates of potash or soda, rather than liquor ammonia, inasmuch as if an excess of the latter be used fog would probably result. The same, however, applies, though perhaps in a less degree, to ordinary plates, and I invariably employ ammonia without meeting with any ill-effects. Hydroquinone is recommended by some workers, but, owing to its tendency to give negatives of a chalky nature, I seldom use it. There is, however, less chance of fog when employing it than when the pyro and ammonia developer is used. There is one precaution which after what has been said will probably be obvious, and that is that when examining the negative for detail and density during the progress of development it should not be exposed for long, or held too near the dark-room window or lamp, as the plates are, to some extent, sensitive to even the ruby light of the dark-room.

In order to obtain the full advantages of colour-sensitive plates it is necessary to use a "screen." This is a disc of yellow glass, varying in depth of tint from a very pale lemon colour to a much darker yellow. It may be obtained to fit inside the lens mounts, or behind the lens itself. The object of using a "screen" is to cut off some of the blue and violet rays, which have too great an effect upon even an isochromatic plate when used without a screen.

The chief advantage of the screen is found when copying paintings. Its use is then invaluable, and it would be both interesting and instructive to the reader if he were to make three copies of a brilliantly coloured painting or chromo-lithograph; the one on an ordinary plate, the next two on isochromatic plates with and without a screen. If full justice has been done to each negative, a most striking difference in quality will be apparent, the isochromatic plate *used with a screen* giving by far the most truthful rendering of the subject.

For photographing cloud and sunset effects isochromatic plates give results distinctly better than those obtainable on ordinary ones. The finest effects of this kind are usually obtainable in the spring and autumn, when, as a rule, stormy and strongly-marked skies prevail. From about an hour before to the period of actual sunset is, perhaps, the best time to get effects of this character. A suitable standpoint having been selected (if the negatives are to be used for double printing, a low horizon should be chosen) the camera is directed towards the sun itself. A moment when it is obscured or partially obscured by a cloud should be chosen for the exposure, which should be given by means of a shutter of the "blind" type, or with one of the Kershaw pattern. Supposing the lens to have been stopped down to about *f*/22, a rapid isochromatic plate used without a screen would require about a quarter of a second exposure. This is assuming the sun to be obscured and very near the horizon, and the sunset to be a yellow one. Very beautiful effects are to be obtained in this way. For such work a screen is generally unnecessary, the yellowness of the sunset compensating for its absence.

For general landscape work it is not necessary to use a screen, though very often better results will be obtainable if one be used. In such case it should be very light in colour—a pale lemon yellow. The effect of the screen is to render the plate still less sensitive to violet and blue, therefore it will be seen that if too deep a colour is chosen the photograph will be untrue, owing to too much of those colours having been cut off. For copying coloured pictures, diagrams, or paintings, or for photographing flowers, a deeper screen should be employed, which will, of course, necessitate a much more prolonged exposure. For copying purposes, or for landscape work where the full effect of the process is desired, the medium rapid isochromatic plates should always be used in preference to the instantaneous. The use of a light screen will double or treble the exposure, and with a dark screen four or five times the ordinary exposure may be required, but when copying length of exposure is a matter of minor importance. No definite rule, however, can be given, and these times are merely approximate.

(*To be continued*)

The Lantern, and how to Use it.

By C. Goodwin Norton.

(*Continued from p.* 400.)

Chapter XII.

THE READING LAMP.

Chief among the minor troubles of a lecturer or lanternist is the reading-lamp, which seldom comes up to its requirements—a good light which will fall only on the book or manuscript, a certainty that it will burn for one and a half or two hours with freedom from smoke or smell, and be always ready for use without the necessity of cleaning and trimming each time of using. As the lamp must frequently be moved from one hall to another while full of oil, the contents must be safe from the risk of spilling.

In the back of the lamp is generally inserted a small piece of coloured glass which can be uncovered by the lecturer as an indication to the operator that the picture is to be changed, or that it is out of focus, etc. It is also usual to have a small bell underneath the lamp to call the attention of the operator to the signal if required.

The reading-lamps constructed to burn colza oil must be carefully trimmed and adjusted to the proper height, or they will smoke and smell, and the same may be said of those burning paraffin. To prevent the escape of the oil when travelling, a tight-fitting cap should be placed over the burner, as the case may get turned upside down, which frequently happens notwithstanding the fact that it may be labeled "This side up," "Glass," as all cases should be which contain optical apparatus. Lamps which have a candle in the form of a night-light often get so hot that the whole of the wax in the shallow vessel becomes fluid and is liable to do serious damage should it be accidentally moved when placed on the top of a piano, table, or other improvised reading-desk. A lamp having a spring to keep the candle at one height would answer the purpose well if it could be kept cool enough to prevent the wax from melting and stopping the action of the spring. For a carriage lamp used out of doors these springs are all very well, but when used inside a lantern-lamp the conditions are changed.

It may seem to the uninitiated a very simple matter to keep a small light burning a short time, and to properly shield its rays from falling anywhere but on the book, but only those who have tried to read a lecture know the inconvenience of holding one's head within a few inches of a heated lamp for one and a half to two hours, and to be in constant dread that it will smoke or go out altogether.

The best source of light would be a small gas jet enclosed in a case with a hood having a reflector inside to throw the light down, and a tent chimney at least a foot long could be easily constructed to carry the heated fumes well away from the reader. This description of lamp would be of little use made in a portable form, on account of the difficulty of getting a supply of gas in many places, but it would be useful in institutions and schools, instead of the makeshifts now so commonly used.

Mr. Hughes' Benzo lamp contains a material which absorbs the benzoline, the residue being poured out in the way common with spirit lamps; there is consequently no danger of leakage should the lamp be moved or upset. Another good pattern is that which burns paraffin and requires no lamp glass, the lamp itself forming a combustion chamber.

Mr. Wood's Lecturer's Reading Desk is very light and portable, as it folds up into small space when not in use, and the light given from the lamp is quite sufficient for readers of average sight to read their notes in comfort.

Some lecturers carry a tripod on which to fix their lamp and manuscript or book, but except for those who lecture every night this is unnecessary, as there is generally a table or desk, or stand to be had in most public buildings.

Mr. Chadwick supplies a portable reading-lamp and desk on a stand which are all concealed from the audience by a curtain, with a view to keep them in the dark as to whether the lecture is read or delivered. It also has the advantage of permitting only the head and shoulders of the speaker to be seen, which to a nervous beginner is a great relief.

Mechanical Slides.—Now that photographic apparatus and dry plates are so cheap, good, and easy to manipulate, the amateur will most likely make the greater part of his slides himself, at the same time most audiences expect something besides a series of plain photographs. The usual kinds of mechanical slides are comic slips; the lanternist will do well to avoid these altogether, unless showing to mere children; lever slides, which have part of the picture painted on a glass fixed in the frame, the other portion being on a cover glass which is held by a brass ring, and can be moved on its centre by a lever at the side; these are effective for such subjects as a ship rocking at sea, a horse drinking, or a man hammering. With all slides of this kind the glasses must be kept perfectly clean, or the dust will show how the movement is effected. There are also slides with eccentric movements to make a ship move up and down by turning a handle constantly in one direction. Sometimes three glasses are used in one frame, but this is seldom satisfactory, as two of them must be out of focus. Next we have rack-work slides, in which the glasses are mounted on the same principle as the lever, but the movement is by a rack and pinion, which revolves one glass, as in the case of smoke coming from a burning house or ship or volcano, or of the sails of a windmill, or two glasses in the case of a chromotrope, which is too well known to need description. Chromotropes are more effective worked by a band on two wheels than by rack-work, but more liable to get out of order.

Perhaps the most effective of all mechanical slides is the one representing a ship sinking in mid-ocean. This always excites wonder as to how it is done, and yet it is very simple. The sea, boats, and a little of the sky are painted on one slide. The second slide consists of two glasses, on one of which is painted the ship, which can be moved up or down as required, and on the other glass are the sky and a little of the sea. Each slide forms a little more than half a circle. They must be both brought on together, or half the screen will be blank; this necessitates the use of three lanterns. When the glass having the ship painted on it is lowered, or rather raised, the ship disappears behind the smaller or blank half of the slide. The two slides must, of course, be properly tinted near where they join, or the illusion will be spoiled. The motion of the ship sinking may be controlled by simple lever or by rack and pinion. The latter is the better, as a mistake is less likely to be made.

Another slide which shows to advantage is the train crossing a prairie or bridge. In this case it is not usually noticed that the wheels do not revolve.

Such slides as a man eating rats are now out of date, and are accountable in a great measure for much of the unpopularity of the lantern with persons possessing the slightest artistic taste.

The non-mechanical effects, or those having one or two simple movements, in many cases show to better advantage than the more elaborate ones, *e.g.*, the Houses of Parliament with the River Thames is shown first by day and dissolved into night, and if three lanterns are available, another slide can be introduced showing the windows lit up and the electric light from the clock tower. A double slip is then placed in the effect lantern. One slip gradually discloses the moon as if clouds were passing over it, at the same time lights up a portion of the river, which appears to ripple when the other slip is slowly moved. If this is carefully done and the slides properly in register, the effect is very natural.

The moon slide is easily made by blacking a plain glass, and tracing a little round hole with a small pair of compasses; the river is lighted by horizontal lines scratched on the black, which will show white on the screen. The ripple is produced by similar lines on the second slip. The first has irregular patches of black, representing clouds which are drawn across the moon, showing at last clear glass.

The best way to blacken glass if it can be quite covered and protected, is to thinly coat it with hot melted wax, and then smoke it in the fumes of burning camphor; or a gelatine plate which has not been developed will answer the purpose; either of these will give much finer lines than of the preparations of black usually sold.

A rain slide is made in this way, but the scratches must be made with discretion, or the rain will appear like bunches of candles on the screen.

Panoramic slides as a rule do not show to advantage, except in the case of ships or boats, because the figures glide, which generally spoils the illusion.

A snow storm requires two lantern. In one is shown the winter scene. The snow slide consists of a piece of opaque calico wound round two rollers, and through it are pricked a number of holes to represent snow; when the calico is passed upwards by winding it on to the top roller, the snow appears to fall across the winter scene. The operator must always take care to close the shutter of lantern or turn off the gas just before the end of the calico is reached, or the snow will appear stationary. It is usual to darken the scene a little before snow commences, and make it light again when the snowstorm is over.

The phantoscope or chorentoscope is a mechanical arrangement by which figures execute changes imperceptibly; it is very effective, but rather a delicate affair, and will not stand much rough usage.

(*To be continued.*)

Holiday Resorts and Photographic Haunts.

SALISBURY.

Salisbury is a centre within easy distance of which the photographer will find much interesting work. The city is reached by the London and South Western Railway, after a journey of eighty-three miles from Waterloo. The Cathedral is of course



the chief object of interest. This is the most perfect specimen of early English work to be found in the country. An excellent distant view may be obtained with a long focussed lens from the river bank at no great distance from the station. A view from this spot formed the frontispiece of Vol. I. of the *Photographic Quarterly*. As one proceeds from the station towards the town a bridge over one branch of the Avon is soon reached; this must not be crossed, but a footpath along the bank of the stream to the right-hand must be followed, the river being kept on the left-hand until a wooden bridge over a branch stream is reached; this must be crossed, for the best position for the view is just at the further end of this bridge. The best time for this view is early in the afternoon. The Close may be reached either by a short cut past the Church-house, or by retracing one's steps to the main street from the station. The great height of the spire renders it difficult to get a general view of the cathedral. The two best, both of which, however, require a wide-angled lens, which may be used here with less unpleasant results than usual, are one from the extreme N.E. corner of the Close, which should be taken before 9 a.m. or after 6 p.m., and another from the N.W., which should be taken between 1 p.m. and 3 p.m. There is no difficulty about the West Front; the North Porch also is worth a plate, and can be best done after 6 p.m. Permission to photograph the interior should be previously obtained of the Dean. The absence of coloured glass allows comparatively short exposures. A dozen plates may be exposed within the building; general views of nave and choir, of the Lady Chapel from one of the choir aisles, will probably be taken. A good view of the transepts may be obtained from the North, showing the "strainer" arch introduced to strengthen the steeple, while the tombs of Bishop Poore, the founder of the cathedral in the North Choir aisle, and of Bishop Giles de Bridport, during whose episcopate the building was finished on the South Choir aisle, and of William Longspee in the Nave, and the cloisters and the Chapter House should not be neglected. If permission can be obtained from the Bishop to photograph in the Palace grounds, several charming views may be obtained of the cathedral from the south and south-east; perhaps the prettiest of these is one from the far side of the lake, showing the palace and cathedral.

There are two gateways leading into the Close, one from the north, the other from the north-east; each of these as seen from the outside is worth a plate.

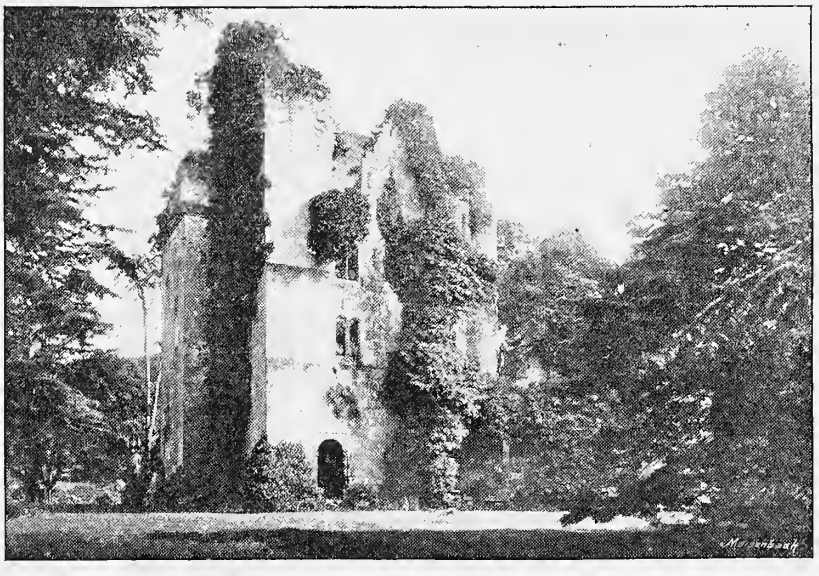
The market cross, and the interior of St. Thomas' church (usually open and entered by a passage leading from the main street under an archway) should be taken. The painting of the "Last Judgment" over the chancel arch is particularly interesting.

These are the chief objects of interest in Salisbury itself, but there are several others in the neighbourhood. Britford Church, a little more than a mile along the river, with two Saxon doorways (which, however, can only be taken from the interior) should not be missed; the church itself forms a pleasing picture from the south-west.

Then there is Stonehenge worth some half-dozen plates, which may be reached either by driving direct from Salisbury, or by train as far as Porton, and then by a walk of six miles through Amesbury.

Some pretty views may be obtained on the river near Wilton, about three miles west of Salisbury, by train or by the road, which will lead the photographer close to Bemerton, with its quaint ivy-covered church, interesting from its connection with George Herbert. Wilton Park is very beautiful, but is not open to the public save on special occasions. The next station but one towards the west is Tisbury; two miles from this lies Fonthill, where the author of "Vatherk" built his Abbey and Tower; little of this building remains, and as it is situated in private grounds it is not at all times accessible, but several good views may be taken on the banks of Fonthill lake, which can be photographed without let or hindrance, as a public road runs through the park skirting the water.

About three miles from Tisbury in another direction is Wardour Park, through which a public road runs. Several good views may be taken here, especially of the old castle, twice be-



sieged and reduced to a ruin in the civil wars. A small gratuity, say a shilling, is expected by the gardener, who gives admission to the enclosure surrounding the ruins, but this formality and the inscription of his name in a book having been gone through, the photographer may stay as long as he likes, and expose plates

to his heart's content, on the ruins and the magnificent cedars around them.

Two other excursions may be made by rail from Salisbury; one to Sherborne about twenty miles past Tisbury along the main line, for the sake of the Abbey Church, and the other to Romsey on the line to Southampton, about fifteen miles from Salisbury. Here is a beautiful Abbey, built in late Norman, Transition and early English times. It is difficult to get any good general views of the outside, but the interior well repays the photographer for any trouble he may take. One object should by no means be over-looked—a representation of the Crucifixion almost life-sized carved on the exterior west wall of the south transept. Such a carving is nowhere else to be found in England, although a small one is carved on a buttress on the west front of Sherborne Abbey.

Plates, chemicals, and other photographic goods may be obtained of Mr. E. Baker, Fisherton Street, Salisbury.

T. PERKINS, M.A.

A Holiday in Norway.

PHOTOGRAPHY AMONG THE FJORDS.

(*Continued from page* 493.)

II. AALESUND, MOLDE, AND NAES.

AT Aalesund came the first revelation of the number of photographers we had on board. The anchor was scarcely let go ere the sides of the boat were lined with amateur enthusiasts, all anxious to get their first photograph of Norway. There seemed to be no end to them. The familiar tripod was everywhere, and many a head was enveloped in the black cloth, the satisfied face that afterwards emerged showing that the judgment pronounced was a favourable one. Indeed, with such a scene in such a light, it could not be otherwise. This was one of the first things to be noticed in Norway—the marvellous clearness of the atmosphere. The "most pellucid air" of Greece can hardly surpass that of the land of the fjords. To eyes accustomed to the duller atmosphere of our own country the result was often very perplexing. Objects that seemed to be within a stone's throw were found to be really a quarter of a mile away. A mile or two expanded into four or five in this country, where the smoke and fog of our cities are things unknown. Such transparent clearness brought joy to the hearts of the photographers, and plate after plate was exposed, while the nimble "Kodaker" marched here and there with a happy countenance, secure of good and effective results wherewith afterwards to recall his first impressions of Norwegian scenery. A halt of some little duration was made at this picturesque port, for the chief steward had some unromantic but very far from unnecessary business to transact on shore. Meanwhile we leaned against the taffrail and feasted our eyes with the magnificent effects produced by the clinging clouds that now descended, girdling the lofty hills, and now lifted, exposing the whole height and length of a mighty inland range. The little jetty, crowded with men, women, and children, secured its share of attention, for the *City of Richmond* created no small sensation in the quiet town. It was by far the biggest vessel that had ever appeared in these latitudes, and many admiring and wondering eyes surveyed its graceful lines from stem to stern, and from stern to stem again. Boats, too, put off, some with fish to sell, and some with the results of the steward's negotiations, while others were filled with the young hopefuls of Aalesund, anxious for a nearer view of the big ship that had come to visit them. The fish seemed marvellously cheap, and were kept "all alive, oh!" by being towed astern in an ingenious little wooden device, shaped like a canoe, constructed so loosely as to admit the water, but closely enough to retain the fish.

THE FIRST FJORD.

The pilot and provisions on board, the order to heave the anchor was given, and we steamed slowly through the clustering islands, past Lepsoë—where Mrs. Mouat on the smack *Columbine* was stranded in February, 1886, after tossing helplessly in the sea for more than a week—and into the imposing Molde Fjord. This was our first fjord, and, great as were the expectations of those of us who were new to Norway, they were more than fulfilled. One takes up the map and sees the coastline all indented and broken up on the west, as if the more solid fabric of the country as it neared the sea were worn into a ragged fringe. But the map can give no idea of the majestic beauty and the enthralling loveliness of those same fissures and indentations, which pierce many miles into the side of the land, and it almost seems as if they are utterly beyond the power of description. The words one vainly seeks to write of them are all too feeble, and do but move "upon the topmost froth of thought." On this day the Molde Fjord lay still and almost sombre as we entered it, for the weather was dull. But every now and then wonderful gleams of silver broke through the clouds that built up an "under-roof of doleful gray," and fell on the shimmering water, while the shifting mists that encircled the guardian hills loosed their white scarves at intervals, and revealed the flashing sun-kissed snows on the higher peaks and the tiny rills that fell all milky-white with foam adown the steep hill-sides midst scattered stones and dark-green firs. Molde, ere long, lay full in view, picturesquely built on the narrow green slopes between the wooded hills and the fjord, a striking contrast in its neat and trim appearance to Aalesund. Molde has more the air of a fashionable watering-place, and is largely patronised by the Norwegians themselves as a holiday resort. Fine views are to be obtained in all directions, the Romsdal Mountains being easily distinguishable. To see them, and not Molde, was then our immediate aim; so, having taken a peep at the place, and been boarded by a customs officer, the ship was headed for the Romsdals Fjord, and early in the evening arrived at Veblungsnæs.

NO DARKNESS AT ALL.

Here for the first time the inconvenience of the delay in starting from Liverpool was felt. The excursion through the Romsdals Valley, which had been planned, could not be accomplished under six or eight hours. But the long Norwegian day came to help us. Ever since leaving England the day had been lengthening and the night dwindling, and when Norway was actually reached, we found no darkness at all. The sun was never below the horizon for more than an hour or two, and ere the sunset flush had left the sky, the rosy glow of sunrise mingled with it. Under such circumstances one hesitated to go to bed. It seemed a sin to sleep while all the world was light, and on this evening it was resolved unanimously that we would *not* go home till morning. So the boats were ordered out, and the steam-tenders with which the ship was provided were soon busy in conveying passengers ashore. Of Veblungsnæs there is nothing to say, except that it is the nearest posting station for the Romsdals Valley, and that it contains the Hotel Bellevue, kept by M. Aandahl. The hotel is a real traveller's joy. Surrounded on all sides by mountains, every window commands a magnificent view, here of the fjord and there of the famous valley.

The visitor who enters it should muster up all the Norse of which he can boast, for that will bring a smile to the face of the buxom damsel who waits on him, or speak in English if he knows not Norse, for she will understand him perfectly, and call for dinner. Then delicious trout and unspeakable pancakes and other Norwegian delicacies not to be described, and the pleasant sparkling *Bayersk öl* that seems to be the usual beverage offered to visitors, will teach him that Norse fare is by no means to be despised. Thus fortified the Romsdals Valley may be attacked, even after 8 p.m., and in a misty rain. Undoubtedly the best way to see this glorious valley is to walk through it; but the way was long and time was short, and so we had to requisition the *carrioles* and *stolkjærres* that were picturesquely grouped in front of the landing-place. These are the universal means of conveyance in Norway, and admirably adapted they are to the nature of the country and to the strength of the swift and sure-footed ponies that draw them. A *carriole* is just a light two-wheeled vehicle made to carry one person and his luggage, and able also to accommodate the postboy behind; while a *stolkjærre*, also two-wheeled, is adapted for carrying two people and the postboy. Both are most comfortable conveyances, especially if one makes one's *skydsgut*, or postboy, merely an ornament, and drives oneself. The ponies scarcely need driving, however, so nimbly do they trot along the hilly roads; only it must be remembered that in Norway the rule of the road is to keep to the right when meeting a vehicle, and to the left when overtaking one.

ROMSDALSHORN AND TROLDTINDERNE.

Starting then from Veblungsnæs, the road first ascends sharply and crosses the Rauma, than which no prettier stream is anywhere to be found, even in Norway. Here it foams and roars over a succession of boulders, churning its dark blue waters into

SEND FOR IT!

ADAMS & CO.'S

PHOTOGRAPHIC ANNUAL FOR 1892-93.

384 Pages. 500 Illustrations. Price 6d., post free 1s.

Contains Articles by all the leading writers, and particulars of a number of novelties that appear in no other Price List whatever. Everything is alphabetically arranged and tabulated, and it is undoubtedly the most clear and comprehensive work embracing Photographic Apparatus and Appliances ever published. Those possessing a copy require no other List whatever, as it contains MORE than all other Price Lists put together. This is achieved by condensing and tabulating sizes and prices, thus giving any information required at a glance.

IT IS RIGHT UP TO DATE.

The "OPTICIAN AND PHOTOGRAPHIC TRADES' REVIEW" says:

"We have received from Messrs. Adams & Co., of Aldersgate Street, and Charing Cross Road, a copy of their 'Photographic Annual' for 1892-93. It is as complete a catalogue of photographic goods as can be desired by the most voracious of buyers, and extends to 384 pages. The catalogue is rendered additionally attractive by some introductory chapters of well-written articles by workers of repute, such as Captain Abney, H. P. Robinson, W. Jerome Harrison, Andrew Pringle, Walter D. Welford, Chapman Jones, John Howson, etc.—The catalogue is well compiled and well printed, and evidently costs the publishers many times the nominal sixpence at which it is sold."

ADAMS & CO 91. ALDERSGATE St. E.C. (FACING THE STATION) & AT 26. CHARING CROSS Rd. W.C (ADJOINING THE CAMERA CLUB) (CHARING CROSS END) LONDON

THE ACTINOGRAPH

Price 10s. 6d.

PAMPHLET FREE ON APPLICATION.

Will shortly be ready for OTHER LATITUDES as follows:—

0° Equator.	52° 30′ North (Now on Sale) for Great Britain.
10° North.	57° 30′ „
20° „	62° 30 „
30° „	10° South.
40° „	20° „
47° 30′ „	30° „
	40° „
	47° 30′

UNSOLICITED TESTIMONIAL.

"Haileybury College, Hertford,

"Messrs. MARION & Co., *May 24th*, 1892.

"I wish to take this opportunity of saying how much I have benefited by the Actinograph. I have had a great deal of copying prints, etc., to do in a room here, and after one or two experiments to decide on the special factor necessary under the conditions, I settled down to be guided entirely by the Actinograph as to exposure. Out of the 300 or 400 negatives I have thus taken, I have had so few failures that I attribute them entirely to my carelessness. Yet I have followed the Actinograph in all conditions of weather, and at all times of the day, from January to May, with plates of different speeds, and with varying stops. I have had but little experience out of doors with it. What I have had has been as satisfactory as indoors.

"I am, yours faithfully, Rev. W. D. FENNING, M.A."

MARION & CO.,

22 & 23, SOHO SQUARE, LONDON, W.

snow white foam; there it sweeps placidly and smoothly along under the dark shadow of the hills; at some sharp bend it is overhung with trees, and where the valley opens it ripples merrily on amidst fields and flowers. The Rauma and the conical peak of the Romsdalshorn—that has only three times been scaled, once by an English lady—and the fantastic crags that the Troldtinderne uplift to the sky keep one company all the way along the valley. In the gardens of the houses that we passed the apple trees were in full bloom, and all along the road a tree, said to be hickory, lit up the twilight with the glimmer of its white flowers and filled the air with fragrance. Graceful birches leant over the road springing up from beds of fern, and higher up the firs gave colour to the dark-hued rocks. On either hand in the vivid green of the meadows lay the marsh marigold in clusters of virgin gold, and ever and anon the violas threw a mantle of true blue over the green, so thickly did they grow. Such richness of vegetation below, such majesty of mountains above, gave to the valley a solemn grandeur and a weird beauty that sufficiently accounted for the legend as to the origin of the Troldtinderne. These are the Pinnacles of the Trolls, and their broken and irregular summits, 6,000 feet high, as seen against the sunset sky, suggested the story of the belated wedding party who, while on their way home over the lofty mountains, were turned into stone by supernatural agency. The lateness of the hour perhaps worked on the feelings; perhaps the thunder of an avalanche that fell ahead of us as we drove along the valley suggested strange fancies, but, however it was, one could almost imagine that the phantom figures of trolls and goblins kept pace with the *carrioles* in that midnight excursion through the twilight valley. For though the soft clouds above the hills were daintily flushed with rose, and the hill-tops themselves stood out clearly in the light of day, a semi-twilight reigned in the valley and added a vague and mystic beauty to the scene.

Just beyond Horgheim ton miles or so from Veblungsnes, is the Mangefos Fall, the finest of all the waterfalls along the valley, and however limited one's time this should certainly be visited. These falls, finding their origin in the snows above, often thread their way for two or three thousand feet down the mountain side, lacing the rocks with silver, and filling the air with their musical murmur. The Mangefos, as its name implies, is a group of streams that now unite and now divide, and finally unite again, and hurl down the cliff in foaming and headlong confusion. Beyond this fall and on to Fladmark there are still fresh beauties to be seen in the ever-changing views of rocks and streams, and hills and falls; but further than this we could not go, and so the ponies gladly turned homewards and arrived at Naes still fresh after a drive of thirty-two miles. The air of the fjord was cool after that of the valley, and leaping trout made rings on the surface of the still water, as we rowed on board at some unearthly hour in the morning!

(To be continued.)

Clouds.*

By Roland Whiting.

Among the many subjects which come within the study of the photographic enthusiast, there are none which require so much care and thought as the printing-in of skies. To the artist the sky often means the picture itself, for in most of the production of great artists we find the sky occupying the greater portion of the picture; and it is generally in the sky that the artist produces his grandest effects. In the same way the photographer should give his attention and thought to the introduction of skies to his pictures, and, with this end in view, he should make close study and observation of the various forms of clouds and the conditions under which they appear. This advice may seem to some to be unnecessary, for they will say that if it is required to introduce a sky, and the clouds contained therein conform to the general lines and balance of the picture, they have all that is wanted. To this I would answer by reminding them that above all things truth must be embodied in their pictures if they would ever have them looked upon as works of art, and such can never be the case if their skies, though correct as regards balance of lines and chiaroscuro, be at fault as regards their nature. It may be asked then if this difference in the various kinds of clouds is sufficient to call for special investigation, and I would say undoubtedly, for clouds which are formed at one season and under one set of conditions do not always occur under others; and it would scarcely be any more absurd to represent a nurse-girl with her perambulator climbing the Himalayas than introduce a wrong description of clouds into a landscape. It is therefore the intention of the writer to endeavour to describe the various forms of clouds, and notify the seasons and times in which they occur. The reader will thus be introduced to the study of meteorology, but in this article as much avoidance of the use of scientific terms will be made as possible, so that the description will be rendered more clear. Meteorologists divide all clouds into seven modifications, three of which are considered primary, and four which appear to be combinations of these primaries. It will therefore be best to describe and comment upon them in their usual order, commencing with the three primary forms.

The first of these is known as the *cirrus*, commonly called the mare's-tail cloud. This is the highest of all clouds, and consists of wavy, parallel, or diverging fibres. It is the first form of cloud to appear after sunrise, and the last to be seen at sunset. It is often seen as a light cloud against a darker sky long after the sun has disappeared, and can therefore be used with great effect in that way in pictures representing the gloaming. In fair weather small groups, and threads of cirri running in an oblique direction from leeward to windward are usually seen; but in wet weather it forms itself into horizontal sheets, and before wind and rain we often find its edges attended by fibres brushed upwards and backwards, especially from the south-west. When these fibres point downwards it is indicative of immediate fine weather. When steady high winds are prevalent, streaks of cirri are seen streaking across the sky, therefore a sky containing clouds of this form would be the most suitable to print into a picture of ships being driven at a good rate across the sea or along a river. It is this form of cloud and its modifications which give existence to halos and phenomena of like nature.

The next form of cloud to be observed is one of the commonest kind which cross the sky. It is known as the *cumulus*, or "day cloud," and sometimes as the "summer cloud," on account of its greatest frequency at these times. It is only formed in the daytime, and is very distinct in shape, having a horizontal base which is sometimes remarkably flat. It is built upwards into large conical heaps resembling mountains, which it frequently rivals in size, and owing to this shape is exceedingly useful in pictorial composition. In fair weather it begins to form some few hours after sunrise, attaining its greatest bulk about midday, and gradually diminishing in size towards evening, totally disappearing as night sets in. Fine, fair summer weather is attended by cumuli of moderate size, and pleasingly rounded shapes floating at a moderate height, and in calm weather they are also found in like manner; but previous to rain these clouds increase considerably in size and blackness, and gradually lower, their surfaces becoming covered with loose fleeces. When cumulus clouds increase in size and number as night sets in, instead of dispersing, they indicate a storm during the night, and when they assume a very spherical form and are very white, they are the heralds of thunder, and as this approaches they become very heavy, dark, and hard in outline, rolling over each other in angry-looking masses.

The next cloud to receive our attention is very widely different from the two preceding forms. It is scientifically known as *stratus*, and commonly as the "night cloud," for reason of its only being formed at night. It is a horizontal strata of cloud resting on the surface of the earth, forming as night sets in and dispersing as the morning sun's rays warm the air, when it rises, and finally forms itself into the cumulus modification. It is this cloud which produces mists and fogs, and as it is seldom formed except at night, it is of little service to photographers, save for early morning or late evening effects. The writer has often been charmed by the pleasing appearance produced when the rising sun casts slanting shadows through the trees upon the morning mists. Such an effect as this is found previous to a fine October day, when these mists seem slow in dispersing. Another instance is when this cloud settles down in the valleys and low meadows, allowing only the tops of trees and other rural objects to be seen above it. When this cloud assumes the state described in these two instances, the finest and most serene weather is always prevalent.

Such then is the appearance and description of the weather attending the three primary forms of clouds. From these all other

* Read before the W. London Society.

forms are derived, two or more of the primaries combining and producing other forms which partake of the nature of those forming them. We will now briefly notice these secondary forms and circumstances attending them. The cirrus and cumulus in combination produce the *cirro-cumulus*. This is the well-known "mackerel sky." It consists of small well-defined rounded masses of cloud in close horizontal arrangement, sometimes united, leaving small openings through which the blue sky can be seen; at others, each individual mass is smaller, when it resembles sheep in a flock. It is always accompanied by fine weather, and rarely occurs in winter. It is, therefore, essentially a summer cloud. It is always indicative of a rising temperature, and when such takes place it is frequently attended by cumulo-stratus, a modification which we shall speak of directly. After a wet and cold spring, this form of cloud can with advantage be introduced into pictures indicative of approaching summer. The *cirro-stratus* is a form of cirrus, partaking of the nature of the stratus. It is known as the "mackerel-backed sky." It is caused by the cirro fibres becoming horizontal and approaching each other in a lateral manner, giving it the peculiar form of a vane, hence it is called the "vane-cloud." It is seen at all seasons of the year, and precedes wind and rain; and frequently occurs in the intervals between storms. It is also frequent in cold snowy weather, and is generally accompanied with cirro-cumulus when it precedes a storm. When it is of a wavy form it is accompanied by thunder. The *cumulo-stratus* is another modification which is seen at all seasons. It is of the cumulus form, but more flattened, and is frequently surrounded by heavy overhanging masses. Sometimes it appears as a cumulus surrounded by small fleecy clouds, at which times thunder is in the air. This cloud is in existence always when sudden changes in the atmosphere are taking place. The last form of cloud to be considered is a combination of all the others; *cumulo-cirro stratus* or, as it is more commonly called, *nimbus*. This is the true "rain cloud." Above this usually appears a sheet of cirrus, and when the cirri projecting from the top of it are very numerous, frequent showers are prevalent. This combination is then very characteristic of April, and can be used with great effect in April pictures. A breaking up of the lowest surface shows a cessation of rain. In open landscapes, a very picturesque appearance may be given, if the sky consists of small masses of nimbus, with the rain falling copiously from them, whilst the sun is shining between the clouds and illuminating the surface of the earth in patches. When the sky is quite clear, and there are only small scud clouds floating about, their shapes tending in one direction, it is very characteristic of high winds, but when these clouds are floating around hard outlined, heavy masses of cloud, then rain accompanies the wind. Such cloud effects may be seen in a wet March; and always in unsettled weather the clouds should be rendered very distinct. This is entirely the reverse in calm, fine weather, which is characterised by very soft, and frequently faintly outlined clouds. At this time smoke ascends in a very perpendicular manner. When a halo is to be depicted, the most suitable clouds to be used are the cirro-stratus, as they are most frequently present when a halo is produced. The various forms of cloud have now been described, and the weathers which attend them have been commented upon to sufficient extent to enable anyone to give to his pictures such atmospheric effects as will be most in keeping with the general subject; and it is highly necessary that such things should be studied, as it is incumbent upon every artistic picture maker that his results should at least be true to nature. To such students then have the remarks contained in this article been addressed, and it is hoped that they may prove of such assistance; and to those who have hitherto been careless of them, the writer trusts they may lead to the observation of sky scenery and its application to photography.

Mr. R. Chessall, Pharm. Chemist, of Sidmouth, has a dark-room for the use of amateurs, and keeps every requisite for photography in stock.

The Great Eastern Railway Company have sent us a very convenient list of farmhouse and country lodging in the Eastern counties with useful information which will prove valuable to holiday-seekers.

Mr. J. C. Mummery's lecture on "Gelatino-chloride of Silver Paper," printed in our last two issues, was read before the North London, and not the South London, Photographic Society as stated.

CHEMICAL PROCESSES IN

Toning Gelatino-Chloride Printing-out Paper

IN THE COMBINED BATH.

BY E. VALENTA.

THE many conveniences which the use of the combined toning and fixing baths present over the use of separate toning and fixing baths for chloride of silver prints have caused these baths to be very generally used by amateurs, and many ready-prepared baths to be placed on the market.

If one looks through last year's photographic journals, a large number of formulæ for such baths will be found; still greater variations, however, the various instructions for use issued by the various manufacturers present.

By careful consideration the number of these formulæ can, however, be reduced, since many are actually identical, and it frequently happens that a formula published in a German paper is translated into English without the author's name being given, and the weight being translated into English weights, and then a French or German journal translates the same and the weights are again translated, so that finally, by the aid of an error or two in conversion of the same, a perfectly new receipt is formed. I have taken the trouble to collect a number of published formulæ, and a summary of the same reckoned for 1,000 parts of water is given below :—

	Hypo.	Sulpho-cyanide of ammonium.	Sulpho-cyanide of potassium.	Sodium acetate.	Sodium tungstate.	Acetate of lead.	Nitrate of lead.	Citric acid.	Alum.	Sodium chloride (salt).	Chloride of gold.	Chloride of ammonium.	Silver nitrate.	Ammonium carbonate.
1	200	25	—	15	—	—	—	—	4	—	1	2	—	—
2	100	80	—	—	—	—	1	—	40	—	0·1	—	—	—
3	200	25	—	—	—	4	—	—	30	—	0·7	—	—	—
4	46	23	—	46	—	—	—	—	8·3	—	0·83	—	—	—
5	250	26	—	—	15·6	—	—	—	—	—	1·56	—	—	—
6	200	23	—	15	—	—	—	—	25	—	1	2	—	—
7	260	20	—	—	—	5	—	—	10	—	0·4	—	—	—
8	250	27·5	—	—	—	10	10	7·5	7·5	—	0 38	—	—	—
9	200	30	—	5	—	20	10	—	—	—	0·5	—	—	—
10	250	15	15	—	—	10	10	8	8	—	0 6	—	—	—
11	250	28	—	—	—	10	8	8	8	—	0·34	—	—	—
12	240	24	—	48	—	—	—	—	—	—	0·78	—	—	—
13	175	10	—	—	—	—	—	—	20	45	0·2	—	—	—
14	225	25	—	—	—	6	—	6	—	—	0·3	—	—	—
15	250	27	—	—	—	—	10	7·5	7·5	—	0·8	—	—	—
16	150	15	—	15	—	—	10	—	—	—	1·0	—	—	—
17	200	25	—	15	—	—	—	—	10	—	1·0	2	—	—
18	125	—	—	—	—	—	47	—	—	—	—	—	—	—
19	94	—	—	—	—	—	31	—	20	—	—	—	—	—
20	227	27	—	23	—	—	—	—	—	7·3	0·9	4·5	4·5	4·5
21	190	—	—	—	—	—	3·6	—	—	—	0·7	—	—	—
22	136	23	—	—	—	—	—	—	sat. sol. 23	4·5	0·28	—	—	—
23	200	34	—	50	—	—	—	—	sat. sol. 334	—	—	2	—	—
24	250	26	—	—	—	—	—	—	—	—	1·5	—	—	—
25	200	—	—	—	—	—	—	—	—	—	0·42	—	3·1	—
26	240	—	—	—	—	—	1	—	—	20	0·7	—	0·2	—

REMARKS.

(All the formula = 1,000 parts of water.)

1. Liesegang's Aristotype—old formula.
2. " " *Photo. Archiv.*, 1890, p. 118.
3. A. Lumière et Fils, 1891.
4. "Photo. Almanach," 1892, Aristotype.
5. Tylar, "Phot. Alma.," 1889.
6. Talbot's Delta.
7. Miethe, for Kurz' Celloidin Paper, 1891.
8. Instructions " " "
9. Hruza for collodion paper (Eder's Jahrbuch, 1891).
10. Moh's Celloidin paper, 1892.
11. Dresden " " "
12. Ilford formula.
13. Stolze, 1887.
14. Howson, 1891.
15. Bagart for Collodion (Bull. Assoc. Belge, p 483, 1891).
16. Langensheid ("Phot. Woch.," 1890, p. 47).
17. AMATEUR PHOTOGR., 1891, p. 44.

18. Newton, for collodion paper.
19. "Americ. Annu.," 1892, p. 43.
20. Schauer ("Phot. Nachrich," 890, p. 30).
21. *St. Louis Photogr.*, 1890, p. 50.
23. 'Anthony's Bull.," 1890, p. 151.
24. *St. Louis Photogr.*, 1890, p. 165.
25. *B. J. P.*, 1890, p. 538.
26. Stolze's "Instructions."

If we consider the above table more closely, we shall find that most of the toning baths included in it consist of water, hypo, sulphocyanide of ammonium, alum and chloride of gold, whilst those which are specially intended for collodion papers contain besides these ingredients generally some lead salt.

Baths Nos. 18 and 19 in the table are conspicuous in that they contain no gold, but only hypo and nitrate of lead, the latter bath as a necessary ingredient also alum, and No. 25 which only contains hypo and gold.

On the action of the individual ingredients of the toning and fixing baths as we use them to-day, up to the present time no examination has been given.

Chloride of silver prints present as a rule an unpleasant tone, if they have been fixed in a neutral fresh fixing bath; the tone, which approaches a brick-red, turns, if the print is placed in an old or with acetic or citric acid acidulated bath, gradually to a brown.

Blanquart Evrard* described this action of old partly decomposed hypo solution, and stated as the cause of this behaviour the action of the silver nitrate on the hyposulphite of soda; he also recommended then the addition of acetic acid to the fixing bath. The actual basis of this toning is in any case the formation of sulphide of silver, since the hyposulphite of soda, as well by long standing as also by the addition of small quantities of dilute acids, suffers a decomposition into sulphurous acid, or sulphite of soda and sulphur, which decomposition may be represented by the following equation:—

$$H_2S_2O_3 = H_2O + S + SO_2$$

Hyposulphurous acid — Water — Sulphur — Sulphurous acid.

This decomposition, however, does not take place quickly, but the liquid contains, even after standing for weeks, always still small quantities of hyposulphurous acid. If a plate of silver is now placed in an acidified solution of hyposulphite of soda, it is blackened by the formation of sulphide of silver. Many salts, especially the acid salts and alum, act similarly to the weak acids. If a solution of hyposulphite of soda is mixed with a solution of alum, a cloudiness soon appears, consisting of precipitated sulphur and aluminium oxide. This decomposition may be expressed by the following equation:—

$$3Na_2S_2O_3 + Al_2(SO_4)_3 = Al_2O_3 + S_2 + 3SO_2 + 3Na_2SO_4$$

Hypo. sulphate. — Aluminium oxide. — Sulphur acid. — Sulphurous acid. — Sodium sulphate.

This decomposition takes place very slowly. If a print on chloride of silver emulsion paper, celloidin or aristotypye is now placed in the filtered solution, it becomes first yellowish red, then brown, and after longer action grey-brown, and unpleasant. If several prints are toned, however, in the same solution, they are later evenly toned brown, the reason of which is that the hypo has taken up silver salts, chloride, acetate, and citrate of silver, from the film of emulsion, which form the hyposulphate of silver, or the double salt:—

$$3Na_2S_2O_3 + 2AgCl = Ag_2S_2O_3(Na_2S_2O_3)_2 + 2NaCl,$$

and this salt considerably influences the sulphurisation or sulphur toning of the silver image.

I carried out the experiment of toning with alum and hypo with the following solution:—

Solution of hypo, 20 per cent. 125 parts.
" alum 20 "

The liquid became turbid very quickly, was filtered, and in the clear solution some prints were fixed and toned, one after the other. The first prints showed after ten minutes' action the greyish-brown tone, whilst the third and following prints attained the ordinary photographic tone. This observation ought to be the reason why it has been so frequently recommended to add either nitrate of silver and chloride of ammonium or sodium to the combined toning and fixing bath, or before use to fix in the same clippings of sensitised paper.

The same result as with alum is obtained by the use of acid fixing baths, for which purpose citric acid is specially suitable; in this case also, the hyposulphite of soda is decomposed into sulphurous acid and sulphur, which latter *in statu nascendi* causes the formation of sulphide of silver.

(*To be continued.*)

* *Dingler. Polytech. Journ.* 104, p. 52.

Societies' Meetings.

Brixton and Clapham.—On the 21st inst., Mr. W. H. Smith, of the Platinotype Co., demonstrated the working of their new cold-bath paper, pointing out its advantages over the hot-bath method. Among these was the power placed in careful hands of local development by treatment of the print with glycerine. Where solarization of the dark parts of the print was to be feared, or where parts might with advantage be rendered in a lighter tone than the undodged print gave, glycerine was applied just before development, by which means the process was retarded, and the granularity which sometimes characterised prints by the hot-bath method, in such cases, was conspicuous by its absence. The glycerine might be applied with a brush or sponge or might be boldly rubbed on with the hand. The whole print might be treated thus, and the development effected by means of the brush and with oxalate solutions of various strengths. Contrary to expectation no harsh outlines were visible in the finished prints thus treated. On the 25th inst. the annual excursion to Bexley took place, by invitation of Mr. Dresser, the late President. Fair, though cloudy weather attended the efforts of those present, whose attention was fully occupied by the subjects found by stream and on farm. After tea, Mr. J. W. Coade, V.P., on behalf of the members, asked Mr. Dresser's acceptance of an illuminated address expressing their thanks for his services during the three years he has held office.

Hackney.—At the meeting held on the 23rd inst., Dr. Gerard Smith in the chair, Mr. Hensler showed a yellow negative, and asked how to remove the stains. It was said that prevention was better than cure, and sulphite soda was recommended in the developer. Mr. Capel asked how reduction took place on a light fogged plate. It was answered by saying that the silver was unequally dissolved. It was recommended that a fogged plate reduced and intensified would give greater contrast. The chairman recommended a weak reducer. The excursion for Saturday was altered to Carshalton. Mr. Hudson showed cheap dark slides made by Chipper. Mr. Grant said he had exposed a Sandell plate in the Forest. It was dark under trees, with patches of bright sky showing, used *f*/20, and gave 20 sec. about 6 o'clock, without getting any halation. The assistant-secretary distributed samples of Eastman's gelatino-chloride paper. The report given by Mr. Hensler of the Barnet plates (distributed at last meeting), was that they were very good. Mr. Barker then opened a discussion on Orthochromatic plates. The chairman said if we looked through a purple glass at a view we should see the immense amount of reds in nature. These, he said, orthochromatic plates brought out. An ordinary view taken in average light may be no better, but in a yellow light there was a marked advantage. Mr. Dando said, "The Million" used a dyed screen to obliterate all colours but one, which gave a relief to print from. Mr. Grant had used ortho plates for two years, and said in foliage there was a marked advantage over ordinary plates. It was announced that the next meeting would be on Tuesday, July 5th, at 206, Mare Street, the club's new quarters. Visitors are welcome to any meeting. Particulars of membership can be obtained of the Hon. Sec., 12, King Edward Road, N.E.

Holborn.—On 24th inst., Mr. Fred Brocas in the chair. A number of slides by Mr. John A. Hodges were thrown upon the screen, including some excellent figure studies and views of North Wales, Devonshire, Haddon Hall, and Hampton Court. These were followed by some members' slides of Messrs. Cobb and Baker. A number of slides illustrating the "Detection of Crime" concluded the lantern show.

Hove.—On the 14th inst. Mr. E. J. Bedford read a paper on "Artistic Photography," illustrated by twenty examples by Mr. Sutcliffe (kindly lent for the occasion) and by a number of his own photographs. Mr. Bedford gave very valuable hints upon composition, selection of subject, etc., and practical suggestions for photographic work. What to aim at and what to avoid in picture-making was carefully pointed out, and the various points illustrated by the charming selection of photographs shown. Some discussion followed, and a vote of thanks proposed by H. H. Taylor, Esq., who presided, was heartily accorded Mr. Bedford for his paper, and also to Mr. Sutcliffe for the loan of his pictures. Four new members were proposed. Work done at the excursion to Poynings was passed round for criticism. The Secretary announced that the Town Library Committee had acceded to their request that two photographic journals should be supplied to the public reading room, the Club contributing the *Photographic Review of Reviews*.

Liverpool (Camera Club).—The usual meeting was held on 22nd inst., Mr. Jas. Hawkins in the chair. The minutes of the previous meeting having been read and confirmed, reports of the club excursions were read by the various leaders, viz., Rossett by Mr. W. A. Brown, Chester by Mr. W. Tansley, and Ince Blundell by Mr. J. H. Jones. The reports, besides recording much useful information *re* "light," "exposures," etc., were bright and vivacious, and provoked much mirth among the members. The subject for the evening was a de-

monstration by Mr. W. Anderson Brown on the "Kallitype Process," and which Mr. Brown made most interesting and practical. Messrs. Archer and Sons exhibited their new two-guinea Repeatograph hand-camera, and also showed specimens of Brown's mechanical process of printing from negatives and toning without gold on gelatino-chloride paper.

North London.—On 21st inst., Mr. W. T. Coventon in the chair. After the usual preliminaries, Mr. A. J. Spiller showed some fine prints by the new cold bath platinotype process, taken from whole-plate negatives; Mr. B. J. Grover a series of hand-camera pictures taken in Cambridge, on Edwards' Isochromatic films; and the President, Mr. J. Taylor, showed a new stereoscopic shutter made for him for use at the convention. The Secretary called special attention to the next meeting of the Society to be held on July 5th, when Mr. Howson of the Britannia Works Co., Ilford, would introduce the subject of "Isochromatic Photography." A copy of the Ilford "Manual of Photography" had been received for the Society's use, and samples of the Eastman Co.'s new chloride printing-out paper received for trial were distributed to the members. Mr. J. Traill Taylor then gave a conversational lecture on "Photographic Lenses, Ancient and Modern," in which he compared the lenses in use by photographers prior to 1865 and about that period with the lenses now in use, describing fully their principles and construction, and illustrating his remarks by diagrams, and by the exhibition of a large number of lenses of all kinds, which were passed round for inspection. The lecture was highly appreciated.

South London.—On 20th inst., the President, Mr. F. W. Edwards, in the chair. Mr. F. W. Griggs was declared the winner of the award for the best print from a negative on Imperial plates. Mr. James A. Sinclair then read a paper on "Hand-Camera Work." The lecturer said the use of hand-cameras was now becoming recognised, special classes being set aside for work not in recent exhibitions. He was in favour of a camera with a lens of about 4½ in. focus, working at *f*/8, but he usually worked with *f*/10 or *f*/16. The shutter should work in the diaphragm slot, opening and closing right across the lens centre, so that as much light as possible could be admitted during the time of exposures. The changing of plates should take place in the simplest manner possible, *i.e.*, automatically. For development he advocated the use of pyro, getting as much detail as possible, and then strengthening the negative if necessary. Mr. Sinclair's remarks were criticised by several of the members present, in which some divergence of opinion was expressed. There was an attendance of forty. Messrs. R. and J. Beck exhibited and explained their "Frena" hand-camera, together with some enlargements from negatives made with it. Messrs. Houghton did the same with their "Shuttle" hand-camera, showing specimens of work produced by it.

Spen Valley.—A meeting was held on the 14th inst., Dr. Sutherland presiding. The annual exhibition of the society was held and prizes were awarded as follows:—Enlargements: 1st prize, Mr. R. Smith; 2nd, Mr. J. H. Jackson. Portraits and figure subjects: Mr. J. H Jackson. Architectural or Interior: Mr. J. H. Jackson; 2nd, Mr. Burnhill. Landscapes: Mr. J. H. Jackson; 2nd, Mr. R. Smith. Lantern slides (three to form exhibit): Mr. J. H. Jackson (withheld). Dr. Sutherland also offered a prize of materials value 10s. 6d. for the best photograph of a subject to be selected by the Council.

SOCIETIES' FIXTURES.

July 1.—CROYDON.
" 1.—LEWISHAM.—An Evening with Mr. E. J. Wall.
" 1.—RICHMOND.—Informal Meeting.
" 1.—HOLBORN.—Discussion on "Diaphragms, their Use and Abuse."
" 2.—W. SURREY.—Outing to Banstead.
" 2.—PLYMOUTH.—Excursion to Anns and Dendles.
" 2.—PEOPLE'S PALACE.—Outing to Hampton Court and Palace.
" 2.—RICHMOND.—Outing to Dorking.
" 2.—OLDHAM.—Outing to Marple.
" 2.—NORTHAMPTONSHIRE.—Excursion to Brixworth.
" 2.—CARDIFF.—Ramble to Fonmon Castle.
" 2.—S. LONDON.—Excursion to Westerham.
" 2.—LONDON AND PROVINCIAL.—Outing to Theydon Bois.
" 3.—GORDON COLLEGE.—Business Evening.
" 4.—CROYDON.
" 5.—EXETER.—Paper by Mr. Huggins on "Photo-Micrography."
" 5.—S. LONDON.—"Can our Excursions be made more interesting and useful?" Mr. J. F. Kelly.
" 5.—HACKNEY. — First Night of New Premises. Ordinary Meeting.
" 6.—OLDHAM.—Outing to Macclesfield.
" 6.—WALTON.—Stereoscopic Photography. By the President.
" 7.—HEREFORD.—Excursion to Hampton Court.
" 7.—LONDON AND PROVINCIAL.—Intensification.
" 8.—RICHMOND.—Discussion. Outdoor Portraiture.
" 8.—HOLBORN.—A Paper on "Photogravure," by A. Dawson, Esq.
" 9.—HOLBORN.—Official Outing to Cheam.
" 9.—PAISLEY.—Excursion to R.C.Y.C. Regatta.
" 9.—LIVERPOOL.—Excursion to Burton.
" 9.—CROYDON.—Excursion to Wrotham for Ightham and District.
" 9.—E. LONDON.—Excursion to Burnham Beech.
" 9.—BLACKHEATH.—Excursion to Epping Forest and Chingford.
" 9.—CARDIFF.—Ramble to Taffs Well, Castel Coch.
" 9.—HACKNEY.—"Silver Printing." B. Foulkes-Winks.
" 9.—HACKNEY.—Excursion to Zoological Gardens.

Mr. A. R. Wormald, of Sutton, Surrey, the manufacturer of the photo omnibus, has instituted a prize competition in connection with the same, which has resulted in the first prize of two guineas being awarded to Mr. Henry Staynes, of Clapton; the second prize of one guinea to Mr. A. E. Ironside, of Sutton; and the third prize of half a guinea to Miss E. Boord, of London. A second competition has now started and will close on October 31st, full particulars may be obtained from Mr. Wormald.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

QUERIES.

5736. **Dark Tone for Silver Prints.**—Could any reader help me with my toning bath? I have used both borax and acetate baths, but can't get the faces, ties, etc., of persons, and the clouds in views, to come out white, and the colour of the tone is all a dull slate colour. I should feel greatly obliged to any amateur who could help me out of this difficulty. I might also state I have used both pink and white silver paper.—CYMRO.

5737. **Keswick.**—I am going to Keswick for a fortnight's holiday in July, and would be glad if any reader could inform me whether there is an available dark-room in the town, and if I can obtain Ilford plates (yellow and white labels) there.—C. A. R.

5738. **Touring.**—I am much obliged to B. L. for the answer to my query, and should be very glad if, in addition, he would give me full particulars of successful exposures on one or two typical Swiss subjects, so that I may have some guide to go by?—H. C LEAKE.

5739. **Hypo in Toning-Bath.**—What is the object and action of the small proportion of sodium hyposulphite (about 1 gr. per 8 oz.), recommended in many toning-baths for gelatine-chloride paper, and why is it never included in baths for albumen silver paper?—H. C. LEAKE.

5740. **Wratten's Plates.**—Can any one inform me what plate numbers suit these on Watkin's meter, *i.e.*, the "Ordinary," the "Instantaneous," and the "Special"? Mr. Watkins states them to be 5, 33, and 40 respectively, but this does not at all agree with the makers' estimate based on that of Mr. Warnerke, who gives them in the following proportion on his sensitometer, viz., 16 sec., 5 sec., and 1 1-3rd sec., or expressed otherwise, the "Instantaneous" require four times the ordinary, and the "Special" fully twelve times.—MORNINGSIDE.

5741. **Enlarging Negatives.**—Is it possible to obtain as good results by using a quarter-plate camera, making positive transparencies, and from them enlarged negatives of 8½ by 6½, as by taking negatives direct in a whole-plate camera? Will any one kindly give his experiences?—W. M.

5742. **Ross.**—Will any one kindly state which stop I should use, that a Ross No. 2 C. D. V. lens should cover a half-plate, or will it not cover it?—FRA.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

ANSWERS.

5714. **Dark-Rooms.**—Ramsgate: E. Bailey, 9, Queen Street; Pavey and Co., 104, High Street. Margate: W. S. Harvey, The Central Pharmacy, 20, Market Place; and G. E. Houghton, The Stodart Studio. Dover: W. Wyles, 1, New Bridge; J. E. Whorwell, 7, Bench Street; M. Jacolette, Northbrook House. Brighton: S. B. Hardcastle, 71, East Street; J. Williamson, 144, Church Road, Hove; A. D. Norman, 9, North Street Quadrant.—EDITOR.

5716. **Photographing in London.**—You can photograph almost any public building from the street; the parke only by permit. Use both hand and etand cameras.—O L. M.

5719. **Gold Depositing.**—The deposition of gold may be caused by impurities carried into the bath by the prints, by the action of light, dirty bottles, or keeping too long.—EDITOR.

5720. **Hypo.**—This salt will keep well in any vessel with tight-fitting cover, and in solution in a well-closed vessel almost indefinitely.—EDITOR.

5721. **Film Carrier.**—Almost any metal sheath as used for plates, with a piece of cardboard behind film, should answer. Try Fallowfield, Adams, or Edwards for the same.—O. L. M.

5722. **Long Focus.**—The advantage of using long focus lenses is that all objects appear larger, for instance if the focus of single combination is double that of the doublet then the objects will be twice the size. At the same time sometimes the perspective is far more pleasing.—EDITOR.

5724. **Developing.**—A good deal depends upon personal opinion, and it is questionable whether any particular method will fetch out more detail, though it is possible by soaking the plate in ammonia first to obtain softer negatives.—EDITOR.

5726. **Negative Making.**—The only thing to do is to set the print up and copy it in the camera in the ordinary way. From the negative thus obtained printe or lantern slides could be obtained.—EDITOR.

5728. **Chloroplatinite of Potash.**—G. B. should purchase from the Platinotype Company, Southamp-

ton Row, W.C, a 60-gr. tube of the chemical, and then dissolve it in 60 drms. of water. The solution will keep any length of time. For use he should take 1 drm. of the stock solution, add 2 or 3 drops of nitric acid and 4 oz. of water. This batb can be retained and strengthened by addition from the stock solution as occasion required; further acid will also have to be added occasionally.—F. H. A.

5729. **Pinholes.** — The fault is not due to late development. It is probably due to the fact that G. B. C. did not carefully dust the plates before and after exposure. If be did so, the pinholes are caused during the coating of the plates.—F. H. A.

5729. **Pinholes**—Probably you omitted to dust your plates before exposing, or else the pinholes were caused by air bubbles on the surface of the plates during development. It is not likely that the fact of keeping the plates for a few days before development would cause pinholes.—P. HARRISON.

5729. **Pinholes.**—It is most extraordinary that the Ilford plates developed by G. B. C., were full of pinholes, as the "Ilford's" are the best plates in the market; it is certainly not on account of having not developed tbem at once, but most likely they have been left in a damp place.- FRA.

5730. **Changing Bag.** - To my opinion, the best and most efficient changing bag can be got at Watson's, 313, High Holborn, their pocket changing bags are very portable, and the price of them are, for half-platee, 7s. 6d. The advantages they have are especially their portability and convenience with absolute impossibility of light entering into it.—FRA.

5730. **Changing Bag.**—Dollond, Fallowfield, Adams, and Beresford all sell changing bags, see the advertisement columns, prices from 7s 6d. upwards.—EDITOR.

5731. **Exposure.**—In Germany light is about from 20 to 30 per cent. more actinic than in England.—FRA.

5733. **Zinco-Engraving.**—Abney's Instruction in Photography, price 3s. 6d.; Burton's Photo-Mechanical Printing, price 4s.; Wilkinson's Photo Engraving, Collotype, etc., price 5s.—EDITOR.

5734. **Hydro cum Eiko.**—"Ignorance" cannot do better than prepare the four following solutions, as he will then have the development of all and every subject under his control:—

	1.	
Eikonogen		.. 120 gr.
Pure neutral sulphite soda		.. 480 ,,
Distilled water		to 10 oz.
	2.	
Hydrokinone		.. 120 gr.
Soda as in No. 1		.. 480 ,,
Water		to 10 oz.
	3.	
Carbonate potash		.. ½ oz.
,, soda		.. ½ ,,
	4.	
Bromide potasb		10 per cent.

For use, take for detail No. 1, 1 drm.; for density, No. 2, ½ drm.; for speed, No 3, 2 drm.; water, 1 oz. "Ignorance" will find that with the above he will bave a developer combining cleanliness with all the advantages of pyro, and one which I have found to give more detail than pyro, without tbe slightest trace of fog.—CYMRODINIAN.

5734. **Hydro cum Eiko.**—The mixture makes an admirable developer, giving negatives from which beautifully soft prints can be produced. A good formula is that given in Answer 5703, snap-shot developer, of the last week's number.—F. H. A.

5734. **Hydro oum Eiko.**—I have lately been using eiko. in combination with hydro for developing plates (Ilford ordinary), and much prefer the combined developer to either alone. I get the soft effects of the former with the density produced by the latter. I use the formula recommended in the Ilford manual, viz.—

Eiko	50 gr.
Hydro	40 ,,
Sodium sulphite	160 ,,
Water to	10 oz.

For alkali use the same as for hydro alone (Ilford formula), viz.—

Soda hydrate	90 gr.
Water	10 oz.

Of course, a solution of 10 per cent. bromide of potassium can be used, if necessary, in cases of overexposure.—S. C. B., Genoa.

EDITORIAL.

J. T. H.—The swing-back should have been used so that the plate was exactly upright. The plate must always be upright.

B. J. J.—There is nothing to take out the marks caused by the printing ink. Let it be a warning to you for tbe future.

J. H.—Please see "Our Views," p. 483, of last week's issue, which excludes your query. Write to us more fully as to what you want, and we will answer. There is no stripping required for any xylonite or celluloid films. They are treated just like glass plates, and are printed from like plates, though a sheet of glass has to be placed in frame to ensure absolute contact.

F. O. LANE.—Many thanks for information.

ANXIOUS.—It is a very difficult matter. A weak solution of cyanide of potassium is recommended. Try sulphocyanide of potassium 20 gr., water 1 oz., allow to soak for ten minutes, and then dip in a solution of ferridcyanide of potassium of same strength, then wash well and dry.

RICHMOND.—Can you call upon us any morning next week, and we will ferret out all you want to know, or if you will make appointment we will try and keep it.

R. P.—Try Watkins' exposure meter. For shutter a simple drop, or Tylar's window-blind shutter. If you could send us up a negative we would see what was the matter. The Britannia plates are not the same as the Ilford. The calculation of exposure with a pinhole follows exactly the same law as lenses, *i.e.*, divide the distance between plate and pinhole by aperture of pinhole.

INDIAN PLATES.—Your query cannot now be inserted, but we answer by post.

J. GABRIEL.—We cannot get brilliant prints on the paper, due probably to improper keeping. You can recover the platinum by burning the paper, carefully collecting the ashes, and treating with successive portions of aqua regia, evaporate the solution till excess of acid is driven off, add some ferrous oxalate developer, allow the precipitate to settle, collect, wash, and dry, or else dissolve up for use. The new cold bath AA paper is the best, most decidedly.

H. CRISP.—Entry forms sent on. You can send one print on each class.

CAMERA.—(1) The changing box is as good as dark slides, and much less weight. (2) Metabisulphite of potash is an acid salt, and therefore you ought to add more ammonia to the developer. It preserves the pyro longer than sulphite, but will, as you have found, act as a restrainer. (3) The average time required to finish a print from a negative of average density varies so much with the light that we cannot give you any definite answer, but about 4 to 6 hours, including printing, toning, fixing, and washing. (4) The exposure depends, of course, on the light, but about five minutes, we should say. Under-exposure and under-development are probably the cause of your dirty whites.

FERRO.—Nievsky's plates must be developed with the following:—

A.	
Carbonate of soda	½ lb.
Sulphite of soda	¼ ,,
Dissolve in 1 quart of water, and add—	
Hydroquinone	½ oz.
Bromide of potash (10 per cent. sol) ..	2 ,,
Saturated solution of hypo	⅓ ,,

MELITA.—Blisters are merely local frilling. If they appear in or after the fixing bath use the combined alum and hypo batb made as follows:—

Mix saturated solution of alum	1,000 parts
With ,, ,, sodium sulphite	300 ,,
Then add—	
Solution of hypo (1:4)	1,250 ,,

Be careful of the temperature of your solutions; keep them as cool as you can, and all of the same temperature.

L. R.—Letter by post.

HOSPITAL.—We would suggest an iso. as the best. You can develop, and then wash well and immerse the plate in a mixture of chrome alum, sugar, citric acid, and sulphite of soda, but if you must develop whilst away, then fix also; don't leave it till you come back.

E. W. MALE.—Try Fitch, 34, Angell Road, Brixton, for matt celluloid sheets. You can use the old platinum salt by mixing the baths suggested on p. 493 of last week's issue.

W. L. C.—We have not any data, but will try and get some for you. You will find it much cheaper to buy lenses.

ALPHA.—Send up camera, by all means.

C. DAWSON.—Many thanks. Paper shall appear next week.

MORNINGSIDE. Please see our note re queries in last week's issue.

W. M.—You would find the "Aptus" Universal hand-camera, made by Sharp and Hitchmough, of Dale Street, Liverpool, answer your requirements.

X. Y. Z.—By all means use the red label plates. You may not want the extra rapidity, and can then stop down, but it is convenient to have it in reserve if required.

EIKONOGEN.—(1) The films are quicker than the ordinary, the proportionate exposure being 1 for the films, and 1½ for the plates. (2) It is not advisable to take the negatives through the film, as we have found definition suffer. (3) Colour-sensitive plates may be changed in a deep ruby light not necessarily in the dark. (4) We do not like the plates named so well as the originals. (5) Not absolutely, though nearly so. We may possibly see our way to place the second class in order of merit.

MANFIELD.—If the toning bath is acid the prints may refuse to tone, but they always turn yellow first. Pyro in the bath would cause precipitation of the gold. Add a good-sized pinch of carbonate of soda to the bath, and then try.

H. L.—There is a Surbiton Society, Secretary, A. E. Lane, Esq., The Ferns, King Charles Road, Surbiton.

H. ORMEROD.—No. 1 and 2, development not carried far enough; No. 3 and 4 both suffer from green fog, which you call yellow marks. They really are yellowish-green by reflected light. The proper treatment would have been to have bathed them in—

Ferric Chloride	50 gr.
Potassium Bromide	30 ,,
Water	4 oz.

then developed with ferrous oxalate. Increase your P number when using the meter, you will thus increase the exposure, or else try the developer suggested by Mr. Watkins, viz.:—

Pyro	2 gr.
Bromide	1 ,,
Ammonia	2 ,,
Metabisulphite of Potash	1 ,,
Water	1 oz.

This is the developer his P numbers are calculated for, or if you prefer to stick to the developer you are using reduce the alkali by half at first. Shall we return negatives.

Sale and Exchange

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word: compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques or Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

Bicycles, Tricycles, etc.—Safety bicycle (Success), light roadster, solid tyres, gear 60 in., all balls, cost £17; exchange for good quarter-plate camera set, or state lowest cash price with particulars.—R. Baxter, 17, Atbol Street, Belfast.

Cameras, etc.—Beck half-plate square mahogany, three double backs, solid leather case with lock and key, £4, or exchange Chadwick stereoscopic camera; Blair square whole-plate mahogany long-focus camera, complete with tripod, six feather-weight double slides, new, in case, £10.—Marshall, 24, Franche Court Road, Tooting, S.W.

Half-plate camera, double extension, rack work, every movement, 32s.—Allen, Moffatt Street, Maidenhead.

Cameras, Lenses, etc—Quarter-plate camera, square, cloth bellows, double slide, landscape lens, folding stand, hand box, printing-frame, new, 20s.; ditto, similar camera, etc., but without stand and box, 14s.; both Fallowfield's; mahogany square camera, plate 7 by 7, leather bellows, double slide, fitted half and quarter carriere, new full-plate landscape lens, sliding ash stand, capital condition, 20s.—E Lyons (side entrance), 27, Pilgrim Street, Ludgate Hill, E.C.

For sale, a half-plate 1889 Instantograph camera, rapid lens with adjustable diaphragm and patent shutter, and two dark slides, price £2 15s. May be seen on application to H. P., 67, Downs Road, Clapton.

First-class half-plate camera, six double backs, £5 10s.; Optimus rapid Euryscope lens, £4. Seen any time by appointment.—F. Holmes, French Embassy, Albert Gate, London.

Quarter-plate landscape camera, dark slide, lens and shutter, bargain, 29s.—752, Old Kent Road.

Dark Slides, etc.—Dark slides, three half Instantograph, new, 6s. 6d. each; 7 by 5 grand rectilinear lens, stops *f*/8 to *f*/32, hood and flange, 25s.; approval.—Adams, 90, Hatton Garden.

Three Tyler's metal dark slides, with adopter and focussing screen, to fit Lancaster's quarter-plate Instantograph, 6s.—H. Ilosking, 212, Lambeth Road.

Hand-Cameras, etc.—Last season's Talmer band-camera, holds 12 quarter-plates, time and instantaneous shutter, cost £3 10s., together with six dishes, cutting shape, etc.—Edward Cottle, 3, Union Terrace, New Brighton.

Stereoscopic Company's 5 by 4 graphic hand-camera, rapid rectilinear lens, time and instantaneous shutter, plates or films changed automatically, perfect order, cost £13; take £6 10s.—Ladbury, 131, Upper Street, Islington, N.

Fallowfield's Facile hand-camera, in good condition, superior single lens, working *f*/11, fine definition, £2 10s.—R. M. Jones, 98, Tweedale Street, Rochdale.

For sale, a half-plate hand-camera fitted with Swift's lens, Wollaston shutter, and a rollholder, covered with Morocco leather, like new, price £10. Further particulars from F. Bradley, Raglan House, Beaumaris, Anglesey.

London Stereoscopic Company's hand-camera, quarter-plate, quite new, cost 5 guineas, price £2 10s.—No. 312, office of this paper, 1, Creed Lane, E.C.

Lantern.—Lancaster's first quality enlarging lantern for oil or gas, 9 in. condensers, good condition,

cost £11. Offers to R. T. Walker, Balance Street, Uttoxeter.

Magic lantern, Optimus, best make, mahogany body, 4 in. condensers, splendid definition, condition as new, limelight and oil lamp, cost £5, a bargain at £3.—No. 311, office of this paper, 1, Creed Lane, E.C.

Optimus three-wick lantern, condition as new, only used six times, and 40 slides—Gulliver's Travels, Egyptian War, Venice, etc.—carriage paid, 37s. 6d., cost double; suit a clergyman; trial allowed.—Heathcote, 3, Ritson Road, Dalston.

Lenses, etc.—Ross' No. 3 P. symmetrical, cost £3 10s., covers half-plate, 45s.; Dallmeyer 6 by 5 R.R., with Newman's shutter, cost £7, sell £4 10s.; 7 by 5 best French R.R., cost 45s., sell 20s.; Lancaster's half W.A. rectilinear (iris), cost 42s., for 30s.; Lancaster's quarter Instanto lens, new, 15s.; whole-plate camera (Watson's Premier pattern), long extension, every movement, one double slide, whole-plate Wray's landscape lens and stand, cost £12, sell £7 10s.; half-plate Lancaster's best brass-bound camera, five double slides, cost £7 10s., sell £5; mahogany revolving stereoscope for 50, cost £3 10s., sell £1 15s.; 7½ by 5 Watson's Tourist camera, three dark slides, cost £7 10s., for £3; Lancaster's half-plate Instanto set (splendid lens), £3; studio stand, good as new, cost £2 10s., sell 30s.; 21s. Griffith's detective, 15s.; 21s. Stirn's vest camera, 7s. 6d.; 15s Jeffery print washer, 7s. 6d.; Newton's £5 5s. patent Phantasmogaria lantern, 4 in. condenser, mahogany 4-wick lamp, 60s.—Parlby, 9, Cradock Street, Swansea.

Ross' 9 by 7 rapid symmetrical lens, iris diaphragms, perfect condition, cost £8 5s., price £6; Thornton-Pickard extra-rapid time and instantaneous shutter, 2½ in. hood, with speed indicator, new, fits above lens, cost 35s. 6d., price £1 5s.; Dallmeyer 8½ by 6½ rapid rectilinear lens, good condition, cost £7, price £5.—No. 303, office of this paper, 1, Creed Lane, E.C.

Whole-plate rectilinear, 11 in. focus, iris diaphragms, *f*/8 to *f*/64, movable hood, splendid lens, new, 25s.—L., 8, Kenilworth Road, Willesden Lane, London, N.W.

Ross' rapid symmetrical lens, 5 by 4, cost £4 5s., price £2 10s.; Ross' portable symmetrical, 4 in. focus, cost £3 5s., price £2 2s.; Ross' portable symmetrical, 5 in. focus, cost £3 10s., price £2 5s.; all in perfect condition.—Howard, 49, Pier Road, Erith.

Wray's W.A. landscape lens, 9 in. focus, used twice, 28s. cash.—No. 310, office of this paper, 1, Creed Lane, E.C.

7 by 5 rapid rectilinear lens, Waterhouse diaphragms, new, 20s.; 7 by 5 rapid landscape lens, Waterhouse diaphragms, 10s.—McComas, 5, Laurence Pountney Lane, City.

Optimus portable symmetrical 7 by 5, sacrifice 31s.; splendid lens; approval.—A. Lambert, Star Street, Ware, Herts.

Quarter-plate lens, sliding mounts, post free, 5s.—J. Hill, 35, James Watt Terrace, Barrow-in-Furness.

Quarter portrait and view lenses, exchange for quarter Laverne; also AMATEUR PHOTOGRAPHER from June, '89, to date, clean, 5s.—No. 2, Osborne Villas, London Road, Buxton.

Beck's 12 by 10 rapid rectilinear, iris diaphragm, new, £6 18s.; Beck's 5 by 4 ditto, ditto, £2 15s.; Beck's 7 in. wide-angle rectilinear, new, £4 3s.—Marshall, 24, Franche Court Road, Tooting, S.W.

Dallmeyer 1A cabinet lens, £7; Dallmeyer 5 by 4 R.R. lens, £2 10s.; Ross' cabinet lens, 8½ in. focus, £7; Crouch's 10 by 8 W.A. lens, £3; pair Crouch's 3 in. wide-angle lenses, £3.—Biddle, 97, Medlock Street, Manchester.

Optimus 7 by 5 rapid rectilinear, Waterhouse stops, excellent condition, 37s. 6d.—J. H. Godding, 6, Milton Villas, Newbury.

Rollholder.—Half-plate Eastman's rollholder, latest pattern, 28s.; half-plate Instantograph lens and shutter, 16s. 6d.; 7 by 5 wide-angle rectilinear lens, 30s.; three-fold tripod, 6 in. top, 15s.—F., 1, Richmond Terrace, Shelton, Stoke-on-Trent.

Sets.—A fine 10 by 8 camera by Lawley, three double dark slides, a very fine portable symmetrical 10 by 8 lens by Ross, tripod, focussing cloth, satchel; the whole set was bought two years ago and has been little used.—Mrs. A., 24, Marville Road, Fulham.

Le Meretoire half-plate camera, lens, dark slide, tripod stand, rebounding shutter, leather case, specially made, room for extra slides, 45s.; specimen print. L., Gore Lodge, Glenageary, co. Dublin.

Lancaster's 10 by 8 1891 Instantograph camera and one double dark slide, all latest improvements, cost £5 5s., price £3 17s. 6d.; four-fold camera stand by Sande and Hunter, very rigid, for whole or half plate, cost 25s., for 12s. 6d.; quarter wide-angle lens by Ross, London (No. 14,064), with two adapters and flange, only £1 12s. 6d.; Lancaster's whole-plate Instantograph shutter, 5s.; lantern lens (no flange), 5s.; 3½ in. lantern condensers, brass mounts, 2s. 6d.; view finder, cost 5s., for 2s. 6d.; 10 by 8 air-tight glass dipping bath and dipper, best mahogany case, screw top, cost 27s., for 14s. 6d.; 10 by 8 glass bath, slightly cracked, cost 27s., for 10s.—Hutchinson, Mercer Row, Louth.

Half-plate Lancaster's 1892 Instantograph camera, slide, tripod, and R.R. lens, bargain, 67s. 6d.; approval.—14, George Street, Stroud, Glos.

Quarter-plate camera, long extension, reversing swing back, six double slides, Optimus 5 by 4 lens, shutter, waterproof case, tripod, £5.—C. H. B., Litho, 102, Clerkenwell Road.

Half-plate set by Perken, Son, and Raymont, comprising camera, R.R. lens, three double dark slides, folding stand, in leather case, condition as new, 6 guineas.—C. White, Hillside, St. Germains Road, Forest Hill, Kent.

Quarter-plate Instantograph, complete, with dark slide, instantaneous lens and shutter, folding tripod, velvet focussing cloth, in waterproof sling case, very little used, 37s. 6d.—H. Hosking, 212, Lambeth Road.

Lancaster's half-plate Merveilleux set, almost new, specimen print sent, bargain, 32s. 6d.—T. Hall, Artist, Lancaster.

Lancaster's half-plate patent camera (brass-bound), three double slides, rectigraph lens, leather case, focussing glass, and stand, price £6.—A. B., 166, Albany Road, S.E.

Quarter-plate outfit, complete, Lancaster's Le Meretoire, camera, lens, two double slides, tripod, printing frames, quantity of chemicals and mounts, etc., good condition, price 27s. 6d.; approval; deposit.—J. Sanderson, 13, Cort Street, Blackhill, Durham.

Lancaster's half-plate Instantograph, dark slide, tripod, fitted with rapid rectilinear lens, Optimus half-plate burnisher, splendid machine, ash studio stand with adjustment, two dishes, four half-plate printing frames, measures, cutting shapes, retouching desk, two paper backgrounds, Marion's guide, drop shutter focussing cloth, splendid condition, £6 the lot; cost double.—L. G. Harding, Nelson House, Margate Road, Southsea.

Sundries.—AMATEUR PHOTOGRAPHER from 5 July, '89, to 10 June, 1892. What offers? Also half-plate camera, tripod stand, almost new.—MacLaine, Hazel Cottage, Oban, N.B.

AMATEUR PHOTOGRAPHER, 320 numbers, 1888-'92, good condition, 10s.—F. C. A., Willersley, Cromford, Derby.

Photography, vols. i. and ii., beautifully bound, 12s.—63, Tressellian Road, Brockley.

Electric moter, reversible, cost £3 3s., good condition, cash 25s., or exchange to value in photographic goods.—William Hare, Photographer, Sutton, Surrey.

Assortment stoppered bottles, several excellent photographic hand-books, sale, cheap, property deceased, invaluable beginners.—Executor, 54, Orchard Place, Southampton.

Tripod.—Half-plate sliding tripod stand by Billcliffe, good condition, cheap, 10s., cost double; no approval.—B. S. Harlow, Heaton Norris, Stockport.

WANTED.

Cameras, etc.—Old 15 by 12 square bellows camera, rackwork adjustment, and dark slide; condition no object so long as woodwork is sound. Full description and very lowest price to R. D. Smith, 14, Frognal, Hampstead, N.W.

Wanted, cheap, Underwood's quarter convention camera.—Burrows, 18, Kirkland Street, St. Helen's, Lancashire.

Case.—Wanted, case for whole-plate camera.—H., 24, Paragon, Ramsgate.

Lamp.—Ruby lamp wanted; will give in exchange good stereoscopic slides—Egypt, Holy Land, Paris, London, statuary, etc. — H. Mann, 48, Elgin Avenue, London, W.

Lenses, etc.—Wanted, Lancaster's combination rectigraph lens and dark slides to fit quarter-plate Instantograph; state lowest price.—J. Russell, Belmont, Uddingston, N.B.

Rouch's Eureka quarter-plate, good condition. Full particulars to No. 306, office of this paper, 1, Creed Lane, E.C.

Rollholder.—Wanted, quarter-plate rollholder for Shew's Eclipse camera.—Nos. 309, office of this paper, 1, Creed Lane, E.C.

Sets.—Wanted immediately, half-plate camera, with R.R. lens, tripod, two or three double backs, and case, by good maker, in good condition and moderate price; must be sent on approval; deposit.—Logan, St. Oswald's, Tenby.

Show Cases.—Wanted, photographers' show cases with doors, any size, for outdoor use.—Walker, Grove Cottage, Heckmondwike.

Shutter.—See-Saw shutter, oblong, pneumatic, cheap and good.—Mr. Tipper, Grimston, Lynn.

Stand.—Wanted, studio stand for cash, must be cheap; also other accessories.—Cole, 250, Caledonian Road, N.

Wanted, portable stand for hand-camera. Full description to Leake, 76, Comeragh Road, West Kensington.

Sundries.—Wanted, enlarging apparatus; good 5 by 4 R.R. lens.—Parker, Culmore, Londonderry.

Cameras! Cameras! Cameras! Lensee! Lenses! Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, Corner Leadenhall Street, City (late Goy's Medium).

Bargains in Lenses.—For sale, 15 by 12 Optimus wide-angle symmetrical, rotating stops, 10 in. focus, as new, take £4 15s., cost £9, cheap; Dallmeyer No. 3 D patent portrait lens, 8½ by 6½, views 10 by 8, focus 10½ rack focussing, grand article, cost £9 10s., take £6 10s.; Ross' whole-plate rapid symmetrical, Waterhouse stops, works *f*/8, £4 12s. 6d.; whole-plate rapid landscape lens by Tench (this is really same as Dallmeyer No. 3), rotating stops, grand definition, worke *f*/16, will cover 10 by 8, quite new, take 60s, cost more than double; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; whole-plate Suter No. 3, landscape rotating stops, about 12 in. focus, quite new, 37s. 6d., lowest; cabinet portrait lens, quite new, rack focussing, Waterhouse stops, take 25s., cost 60s.; Hockin's desideratum rapid rectilinear, covers 7 by 5, iris stops, movable hood, grand article, quite new, take 32s. 6d. cheap; Wray's landscape, casket lenses, 5 in., 7½ in., and 10 in. focus. iris stops, quite new, £3 17s. 6d.; half-plate Lancaster's Instantograph lens, iris stops and instantaneous shutter, as new, 15s.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Raymont, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Roome, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

Bargains in Hand Cameras.—Stereoscopic Company's Graphic hand-fitted, Stereoscopic Company's black band rapid rectilinear, iris stops, lever focussing, blind shutter, changing box, covered leather, £4 17s. 6d. as new; Lurzo hand-camera by Robinson, Regent Street, quarter-plate rapid rectilinear lens, time, and instantaneous shutter, finder, and leather case, carries 100 films, £4 10s.; No. 2 Kodak rapid rectilinear lens, Instantaneous shutter, new spoole, sixty films, covered black morocco, and in leather case, £4 17s. 6d.; No. 1 Kodak, as new, rapid rectilinear lens, instantaneous shutter fitted, 50 films, covered leather, in case, £2 17s. 6d.; Tolmer hand-camera, landscape lens, rotating stops, finder, carries 12 quarter-plates, changing bag, best condition, take 50s.; Adams's Ideal, covered leather, new few weeks since, very latest pattern, rapid rectilinear lens, carries twelve quarter-plates, two finders, etc., £5 17s. 6d.; Griffiths ¼-plate magazine hand-camera, carries twelve plates, changing bag, good lens, finder, etc., 22s. 6d.; Samuel's patent stereoscopic hand-camera, rapid rectilinear lenses, changing bag, instantaneous shutter, for either quarters, cabinets, or stereoscopic, as new, 37s. 6d.; Samuel's quarter-plate hand-camera for twelve plates, quite new, rapid rectilinear lens, two finders, 32s. 6d.; London Stereoscopic Company's despatch detective, covered black leather, fitted Stereoscopic Company's rapid rectilinear lens, Newman's shutter, two finders, three double slides, rack focussing, size quarter-plate, as new, take £6 6s., cost £10 10s.; Ariel hand-camera, Shew's eclipse pattern, leather bellows, quarter-plate, rapid rectilinear lens, rotating stops, Kershaw shutter, three patent Turnbull slides, quite new, take 63s. All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

Bargains in Cameras and Sets.—Optimus whole-plate camera, leather bellows, reversing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterhouse stops, Thornton-Pickard shutter, three double dark slides, three-fold stand and case, £11 5s., grand lot, 10 by 8 camera by Morley, of Islington, thorough order, leather bellows, reverses, 3 double and 2 single slides, rapid rectilinear lens, folding stand, take £5 5s.; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; half-plate Underwood's Instanto, warranted as new, reversing back, double slide, rapid rectilinear lens, and folding stand, 75s., worth £5; half-plate Instantograph, leather bellows, double extension, Instantograph lens, two double slides and folding stand, best condition, take £2 17s. 6d.; Lancaster's stereoscopic camera, finest leather bellows, size 7¼ by 4½, with extra bellows, two double slides, fitted silver ring, rectigraph lenses, patent See-Saw shutter and folding stand, take £6 6s., quite new; Lancaster's stereoscopic Instantograph, as new, two double slides, 6½ by 3¼ Instantograph lenses, Instantaneous shutter and folding stand, take £3 17s. 6d., quarter-plate Le Meritoire set complete, camera, lens, slide and stand, 21s.; quarter-plate 1890 Instantograph, all latest movements, leather bellows, etc., Instantograph lens, shutter, one mahogony and two metal slides, and folding stand, 37s. 6d., all above guaranteed, finest order. On view, City Sale and Exchange Roome, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

RILEY BROTHERS, 5, Cheapside, Bradford, to make room for their constantly increasing Lantern Trade, are selling off and declining the Photographic Outfitting. All their stock can be had at amazingly low prices. Write for lists of Cameras, Platee, Photographic Papers, Dishes, Tripods, Cards, Chemicals, and every requisite. This is a bona-fide sale.

The Amateur Photographer

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 405. Vol. XVI.] FRIDAY, JULY 8, 1892. [Price Twopence.

Our Views.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

Our Views.—Dishonest Advertisers and the Sale and Exchange Column.

Leader.—Over-printing.

Letters to the Editor.—Hints to Beginners (Forett)—The Blister Fiend (Large, Browning)—A Universal Hand-Camera (Bruno)—Our Competitions (Daly)—South London Exhibition (Levett)—The Photomnibus (Wormald).

Articles.—Elementary Photography (Hodges)—A Universal Hand-Camera (Bruno)—The Theory of Development (Armstrong)—Toning Gelatino-Chloride Printing-Out Paper (Valenta)—A Holiday in Norway.

Amateur Photographer's Tourist Index.

Reviews.—Fortschritte in der Photographie (Eder and Valenta)—Bromide Enlarging and Contact Printing: How to do it (Dresser)—Photographic Enlargements: How to Make Them (Wheeler).

Apparatus.—New Field Glass Pattern Hand-Camera.

Societies' Meetings.—Birmingham—Leytonstone—North Middlesex—Southport—Tunbridge Wells—Woolwich Polytechnic—Fixtures.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months,	5s. 6d.	Twelve Months,	16s. 10d.	
Postal Union	,, ,,	6s. 6d.	,, ,,	13s. 0d.	
Out of Postal Union ..	,, ,,	7s. 9d.	,, ,,	15s. 8d	

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition No. 38.—"Inland Scenery With or Without Figures." Latest day, July 25th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in Amateur Photographer Supplement, August 19th.)

We regret to state that we have another case of dishonest practices in connection with our sale and exchange columns, with evidence from two victims. The practice seems to be to obtain the money for goods, and then dilly-dally about, if threatened, to protect himself under the plea of having given a bill of sale to his sister, and then if anything is said about legal proceedings, our friend immediately assumes an air of injured innocence and declares he will prosecute for malicious prosecution, etc. The matter has been placed in the hands of the police, we are glad to say, so that it is quite possible that

Mr. Greaves *alias* Groves, *alias* Graves, *alias* Buckley,
electrician, etc.,
Brown Lodge,
Smithy Bridge,
Rochdale or Manchester;

or of

75, Halifax Road,
Littleborough;

or of

Church Street,
Halifax Road,
Littleborough,

may be brought to book.

We can only once more request our readers in all cases to insist upon the deposit system, no matter how trifling or trivial the amount may be. It is unfortunate that no sooner has a certain scheme been devised which may be useful to our readers, than it seems necessary to devise a protection against the swindlers who will take advantage of it.

We have received notification of dark-rooms being available for visitors at Mr. T. L. Waterman's Photographic Store, High Street, Shanklin, Isle of Wight, where may also be obtained plates, chemicals, and all the usual requisites, and at the Hillganden Hotel, Mill Street, Bideford.

The *Photographic Quarterly* for July will be published next week, and will contain a fine Woodbury gravure frontispiece from a negative by Mrs. S. Francis Clarke, of Louth, entitled "Jilted." The articles include: "On Developing Pictures on Printing-Out Chloride of Silver Emulsion Papers," by Eder and Valenta; "Life on the Broads," by E. J. Humphery (illustrated); "Recent Improvements in the Manufacture of Oxygen Gas," by C. J. Leaper; "Some Points in Exposure," by Alfred Watkins; "Camera Pictures and their Critics," by H. Maclean; and "Art Studies," by Dr. Alfred Paterson.

OVER-PRINTING.

IT is curious in looking over a set of prints sent in to one of our competitions to find what erroneous ideas some of the competitors have with regard to printing and toning. Certainly we do not exaggerate matters when we state that at least seventy-five per cent. of the prints are spoilt either by the use of an unsuitable printing process, or else by over-printing.

This fault of over-printing has been brought very forcibly to our notice lately, and, in fact, when discussing the question with one competitor, whose work we had condemned for this reason, he said, "Well, I can't see you're right; you say there is no sunshine in the print, yet there are distinct shadows cast by the sun." Because there were shadows our friend argued there must be sunshine, never recognising the fact that it was possible to so degrade the high-lights as to destroy all brightness and brilliancy.

To calmly consider all the causes which lead to this result would, we are afraid, absorb more time than we can possibly spare, but first and foremost, and we are sorry to say the most general cause, is profound ignorance as to what is and what is not sunlight. It seems to be the idea of some workers that having obtained the negative they can do no more in influencing the picture, whereas really the making of the picture lies in the printing more often than one would suppose.

In sending in a print for competition, it is almost wise to print from the negative in as many different printing processes as we can command, and then having obtained the assistance of some friend who actually does know something of photography, as to deciding which process renders the best print, to try and see how far we can doctor this up.

Whether by shading certain portions, or printing in a very subdued light, we cannot improve the contrasts generally. If a strong, hard negative, we may even print in the sun without fear; again, we can sun down a little obtrusive bit of white, or fetch something out of it by concentrating the light by a focussing glass or our special pet rectilinear, though it is hardly wise to put this to such a test.

One or two things certainly have contributed most markedly to the inferior quality of the prints, and yet each or all of the things to which we refer are in themselves advancements or improvements in their own particular branch. For instance: Hydroquinone is certainly responsible for exaggerated contrast between the high-lights and the shadows, and this merely because it is not rightly used. Eikonogen is to blame for loss of sunlight, brilliancy, and general flatness, because development is not continued long enough. Gelatine-chloride paper gives rise to uneven toning, over-toning, and generally poor results.

Now it is unfair to saddle either one of these articles with the faults, but if they hadn't been introduced we are quite sure so many of our competitors would not take us to task for finding fault with their work. Let us take gelatine-chloride paper for instance: there are at least ten or eleven different commercial varieties on the market, and from these we can obtain almost any desired effect we want without trying the collodio-chloride papers, from a high polished rich in contrast to a matt-surface, poor in contrast or soft print, and this by normal printing. By dodging, over and under-printing, we can get all sorts and conditions of prints.

We shall hope to see our readers pay a little more attention to this particular branch; it is almost better to under-print than over-print, the latter being the cause of half the miserable specimens of work we now receive in our competitions

Letters to the Editor.

HINTS TO BEGINNERS.

SIR,—On the invitation of your contributor "Novocastriensis," I will, with your permission, note one or two of the misleading statements in his article on the above.

The inaccuracy of the statement regarding the hypo solution lies in the words, "should the solution not be quite saturated," which implies that saturated solutions are not liable to the surface-attenuation referred to. I do not think the dealer's explanation of the cause of failure with the toning solution is correct. I cannot imagine that a variation in the strength of the gold solution, so infinitesimally small as that brought about by the condensation of water on the sides of the bottle could account for so disastrous results. Each time the gold was used, the solution, by the mere handling of the bottle, was rendered practically uniform. Diffusion is constantly going on between liquids of different specific gravities, provided the liquids are in contact and miscible with each other. In using a few drops of solution of gold chloride, how does your correspondent know that he always uses the top layers?

"Novocastriensis" produces prints to show that his "rough-and-ready" method of compounding a fixing bath is at least efficient. By practice he has found out "how to do it," but I am afraid he has failed to convey the information to your readers.

For a toning bath, the writer makes a solution of borax, 12 gr. to 1 oz., and for use he dilutes it with an equal quantity of water. Solution of borax is stable, and could be made of the required strength at once, and so save double measuring. He says this solution may test acid. Borax is an alkaline salt, and its solution cannot possibly give an acid reaction. I have used the borax bath when of a deep port-wine colour, and have no experience of the slow action referred to in the article.

The only other point to which I will refer is the use of hot water for making solutions. Both toning and fixing solutions are directed to be made with hot water, the latter *boiling*. When the uninitiated, for whom the article is especially intended, comes across such directions, he naturally concludes that the prescribed temperature, being italicised, is a *sine qua non*. All solutions up to saturation point may be prepared with cold water. For most purposes the salt may be put into any convenient vessel, water added, and solution promoted by an occasional shake or stir. For large quantities it is convenient to tie the salt in a muslin bag and suspend it in the water, when solution will take place without any further attention. Why are contributors of photographic formulæ so fond of hot water? I have seen a formula directing ferrous sulphate to be dissolved in boiling water, which decomposes the salt to a considerable extent, and is quite unnecessary.

—Yours, etc., J. G. FORETT.

* * * *

THE BLISTER FIEND.

SIR,—Though somewhat late, I beg to thank those gentlemen who were kind enough to suggest a way of escape from blisters. But the only one that I had *not* tried was that recommended by "John Browning." Had I answered at all, my best thanks would have been due to that gentleman, as, with a paper most fearfully prone to blisters, I did not have the minutest fiend. I see Mr. Browning is hauled over the coals this week, but perhaps your correspondent "P." used a bad or adulterated sample of methylated spirit. I was fortunate enough to get the very best of purple tones. I have also tried the same paper using the spirit differently, as immersing the prints in the spirit *before* toning renders the paper transparent, so that one cannot well see the exact shade at which toning has arrived. Therefore I do not use the spirit until just before going into the fixing solution. I give them a fair rinsing after toning, then immerse in the spirit for from five to ten minutes, then fix in the usual way, then wash thoroughly. Although up to the present the spirit has done its work well, *i.e.*, preventing blisters, I am sorry to say it took all the pink tinting out of the albumen (which pink tint is much liked by some), whence my dislike for having to use any preventive, and as the correspondence under the above title has elicited from more than one the fact that it is quite possible to manufacture a paper that cannot be made to blister it is to be hoped we may look forward to the time when the makers of blistery paper shall be looked upon as photographic sinners. I would respectfully suggest that "P." should give the spirit another trial, being careful to see that each print is not unequally soaked

in the same, or, of course, patches would be the consequence. But whether the same treatment, for papers of different make, will act in the same way I cannot yet say, and I do not *know* if the spirit affects in any way the permanency of the prints. I should not *think* it did.—I am, sir, yours truly, H. S. LARGE.

SIR,—I am sorry "P" has made such a mess of the spirit cure which I advised for blisters. He must have used the stuff sold under the new excise regulation containing mineral oil, when, of course, one could not reasonably expect water to act on places where the oil had taken effect.

As to the flatness complained of, he must certainly look elsewhere than the spirit for the cause. Did he wash thoroughly after saturation with spirit? Because the free silver takes longer to eliminate.

I still claim that my treatment with spirit is a sure cure, *but* the spirit must be good, which I distinctly stated in my advice. Also the operations in connection with this treatment must be conducted with intelligence, or one may expect to get prints as flat as oneself.—I am, yours, etc., JOHN BROWNING.

8, Longfield Avenue, Blackhorse Road, Walthamstow.

* * * *

A UNIVERSAL HAND-CAMERA.

SIR,—Your correspondent "H. E. H." is correct in stating that when viewing G from the back, the image, though direct, is inverted. But when the camera is held to the right side, and the finder is viewed from above, it is easy to judge of the picture as it will appear on the plate, the right way up. A bi-concave lens gives a direct image the right way up. To obtain the same result by reflection, a second mirror is, of course, required, and might be hinged to fold flat when not in use. But "H. E. H." will find, as I did, that the angle at which the second mirror must be placed renders it most difficult to see the image at all.

If the bi-concave lens is secured to the top of the camera, and viewed in a horizontal direction, the camera must be held under the chin, a position awkward, conspicuous, and by no means conducive to steadiness. The finder, as described, is simple and effective.—I am, yours, etc., W. H. B. BRUNO.

* * * *

OUR COMPETITIONS.

SIR,—In your last issue you mention a suggestion from a correspondent to limit your competitions to "one particular plate, one lens, one kind of printing-paper, giving each a turn." In my humble opinion this is a most mischievous proposal. The chief object of your competitions is, I take it, to teach your subscribers to turn out *pictures* by means of photography, not to make them good *machinists*. If you fall in with this proposal you will next prescribe the developer! Photography has often been stigmatised as a purely mechanical art, and I venture to think that if you follow your correspondent's advice you will do something to justify the taunt. I trust that in the future, as in the past, you will judge by results, leaving each competitor free to choose his tools. Should he select an unsuitable lens, or a printing process which does not do most justice to his subject, that is his look-out, but don't wrap your competitors in swaddling clothes. Your correspondent's suggestion is a good one from the optical instrument maker's or from the plate maker's point of view, but regarded from an artistic stand-point it is detestable.—Yours, etc.

Italy. H. DE BURGH DALY.

* * * *

S. LONDON EXHIBITION.

SIR,—Lest any misapprehension should arise from the opening sentence in your paragraph of last week respecting a South London Exhibition, I should like space to say that our committee not feeling that sufficient enthusiasm had been aroused by their proposal (namely, that a joint exhibition of the various London societies south of the Thames be held next autumn in place of the usual local series), have, for the present at least, decided to take no further steps in the matter.

As the next best thing, however, I should like to see the scheme of the South London Photographic Society well supported by the members of the neighbouring clubs.—Yours, etc.,

Brixton Camera Club. FRED. W. LEVETT (Hon. Sec.)

"THE PHOTOMNIBUS."

SIR,—Twice your printer has made a little addition to the spelling of our word "Photomnibus," which is intended by us to mean photos or photography for all. The addition of an *o* makes it Photo-Omnibus, which might be taken to mean a "Bus" fitted as a dark-room, which we need scarcely say we do not build, nor indeed would our popular price, 2s. 6d., enable us to undertake so large an order.—Yours, etc., WORMALD AND CO.

Sutton, Surrey, July 5th, 1891.

Elementary Photography.

By JOHN A. HODGES.

CHAPTER XXIII.

FLASH-LIGHT PHOTOGRAPHY.

Probable Origin of the Flash-lamp—Capabilities—Flash-lamps in general—England's Lamp—How to connect several Lamps and Fire them simultaneously—Arrangement of the Lamps—Home Portraiture—Focussing, an alternative method—Gun-cotton and Magnesium — Drawbacks — Necessary Precautions — Flash-mixtures, dangerous nature of — Taking Dark Interiors — A Difficult Subject, how taken—Development.

IF powdered magnesium, or magnesium dust, be forcibly blown through a flame a rapid combustion of the metal takes place, and the result is a brilliant flash of light. Various other substances, in themselves non-combustible, may be made to ignite in the same way. Indeed, the flash-lamp of to-day was probably suggested by the old-fashioned plan of producing stage lightning by blowing powdered lycopodium through a flame. The light produced by the magnesium flash is sufficiently actinic to permit of a photograph being taken with it, and, indeed, if a little trouble be taken, most excellent results may be obtained. The exposure

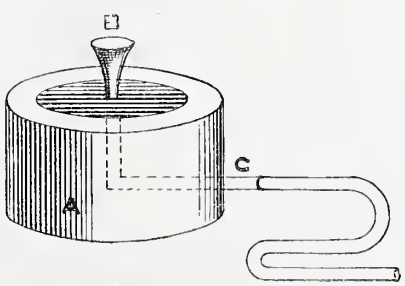


FIG. 1.

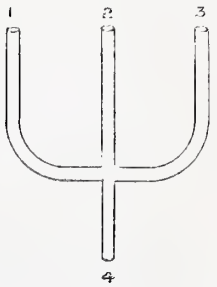


FIG 2

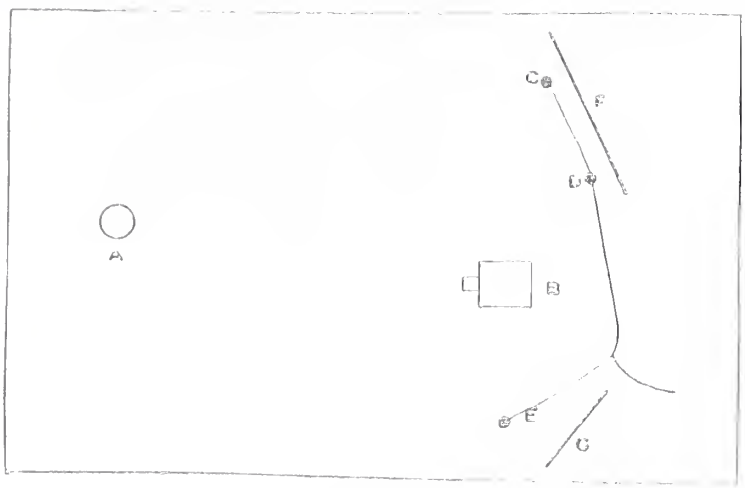
being practically instantaneous, the sitters can be taken in an ordinary room, and whilst engaged in ordinary occupations in natural attitudes without fear of movement.

A great deal of ingenuity has been expended in the construction of "flash-lamps," as the apparatus used in producing the light is called, and the reader will find in the shop of any dealer in photographic materials quite a bewildering assortment from which to choose. It is not my intention here to describe in detail the merits or demerits of the different forms of lamps. Some, no doubt, are more efficient than others, but a suitable lamp should be easily procurable for about 4s., or even less. The general principle of construction is the same in all lamps, that shown in fig. 1 being the invention of Mr. England: A is a metal chamber, upon the top of which a wad of felt, which has been saturated with methylated spirit, is placed; B is a tube in which the magnesium powder is placed, about ten grains being sufficient. The tube B comes out at C, and is there connected, by means of a piece of india-rubber tube, with a collapsible india-rubber ball. Upon smartly squeezing the ball the air-pressure drives the magnesium powder

through the flame, producing an elongated flash of great brilliancy.

It is difficult to get the best effects of lighting with only one lamp, and much better results will be obtained if two, or even three, are employed. It will, of course, be necessary to so arrange matters that the three flashes shall be simultaneous, but this is by no means difficult to do. Supposing three lamps are to be employed, a prong-shaped piece of tube must be procured of the shape shown in fig. 2. The lamps are connected by lengths of tubing to 1, 2, and 3, No. 4 being connected by means of another piece of tubing to the pneumatic ball arrangement, or better still, when several lamps have to be fired simultaneously, to a pair of ordinary bellows.

The general directions given in the preceding chapter upon indoor portraiture apply equally when the exposure is made by flash-light, and, therefore, it will not be necessary to repeat them again here. The most important matter to be attended to is the arrangement of the lamps. The object to be aimed at is to get a good soft lighting, which will bring out the features in well-modelled relief. This, as I previously mentioned, it is difficult to do with one lamp, and the most suitable disposition of the lamps and sitter



Plan of Room
FIG 3

may best be shown by the aid of a diagram. In fig. 3, A represents the sitter, or sitters, B being the camera, and C, D, E, the three lamps. These must always be either behind the camera, or at any rate screened from the lens, and well out of its field, or hopeless fogging of the plate will result. If the lamps are placed close together a hard unpleasant lighting with heavy shadows is likely to result, but by placing them in the position shown in the diagram, an artistic effect should be produced. The great advantage of this system of lighting over ordinary daylight is that the sitters may be placed in any desired part of the room, and one is not hampered with any such considerations as getting the most suitable lighting from the window. Very natural and pleasing pictures may be taken in this way, but much will, of course, depend upon the artistic ability of the operator.

Focussing presents some little difficulty. It is useless to attempt to focus the sitters themselves. The best plan is to place a lighted candle on the seats which they are to occupy, and sharply focus that. The candle being removed the sitters may then be carefully posed, when, if the lens is a reasonably good one, it will be found that they will be quite sharp in the resultant negative. The lamps should not be placed too low down, C and D should be about five feet from the ground, E being about three feet. The combustion of the magnesium results in the production of a dense cloud of white smoke, oxide of magnesium, this subsequently settles in the form of a very fine powder, but will not cause the least damage to furniture. It is advisable not to make a second exposure until the fumes from the first flash have entirely disappeared. Many people disregard this caution and then wonder why they get fogged, flat negatives.

Flash-light photographs may be produced without the aid of a flash-lamp by the following method. A tuft of guncotton, weighing about six grains is loosely spread out on a piece of sheet tin, or on the back of an ordinary tea-tray, and its surface sprinkled over with powdered magnesium, from fifteen to twenty grains should be sufficient. This may be placed on the top of a pair of steps, and ignited by means of a long wax taper. This method is almost as effective as the lamp, the chief drawback being the great amount of smoke that is produced, which although perfectly harmless, causes a very unpleasant effect when inhaled. Guncotton being a very explosive substance when compressed, should not be tightly packed in the tin or vessel containing it, and should only be stored in small quantities.

A third method of utilising the magnesium light for photographic purposes is by the use of what are known as flash powders. All mixtures of this class are of a highly explosive and dangerous nature, both in their use and in their preparation, and I strongly advise the reader not to attempt to either make or use them. I shall therefore not give any formula for making them in "Elementary Photography."

Flash-light photography affords a means of securing photographs of dark interiors which it would be difficult, if not impossible, to secure by other means. As an instance of what may be done in this direction, I may refer the reader to the illustration, and which represents the interior of a wine vault in the City to which the light of day has never penetrated. The exposure was effected by burning a large quantity of magnesium and gun-cotton in the manner already described, assisted by an auxiliary flash-lamp, two assistants standing in recesses in the wall, also burning long strands of magnesium ribbon. Two negatives were taken, both of which proved fairly successful.

I have said nothing about development, for it usually presents no special difficulty, the plates, as a rule, being fully exposed and coming up without forcing. The only practical difficulty in taking flash-light portraits is in avoiding flatness on the one hand and hardness on the other. This being overcome the rest is plain sailing.

A Universal Hand-Camera.

By Major Bruno.

(*Continued from page* 477.)

CHAPTER V.

The interior camera consists of the "back," or frame to which the dark-slides and roll-holder are fitted, conical bellows, a lens-board, and the stage which carries the latter. No base-board is required. It is not intended to describe the manufacture of dark-slides in these articles, directions having already appeared in the pages of this journal. If the amateur is not sufficiently skilled in wood-working to attempt their construction, he is advised to

have them made to fit the camera, of the *block* (not book) form, and with the shutters to draw right out. Messrs. Braine and Sons, 22, Bedford Terrace, Moray Road, London, N., make slides of this description, very compact, and suitable for the camera, at about 4s. 6d. each. If a roll-

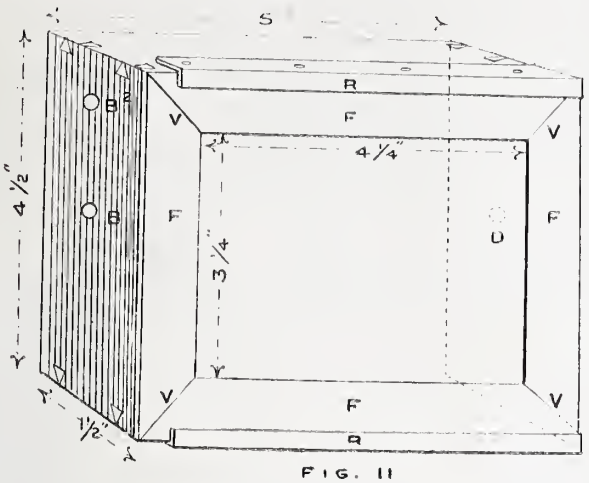


FIG. 11

holder is to be used, care should be taken when fitting it to the camera that it is exactly the same "register" as the dark-slides, *i.e.*, that the sensitive surface of the film is the same distance from the lens as that of the plates in the slides.

Fig. 11 shows in detail the back of the camera, with the dimensions recommended. The frame-work is made of quarter-inch stuff, dovetailed together and assisted by fine brass screws. To the front of this casing a frame F is firmly glued, and a narrow strip of black velvet should be let in for half its thickness, from V to V, to exclude all light when the dark-slide is in position. The whole of this frame-work, and the front F, must be perfectly true, and squared up in all parts, as upon this the correct fit of the dark-slides, etc., depends. R R are runners of sheet-brass, screwed to the top and bottom of the frame-work, and turned over at right angles for one-eighth inch. A groove being cut along the sides of the dark-slides they run upon these brass strips, and are at the same time passed

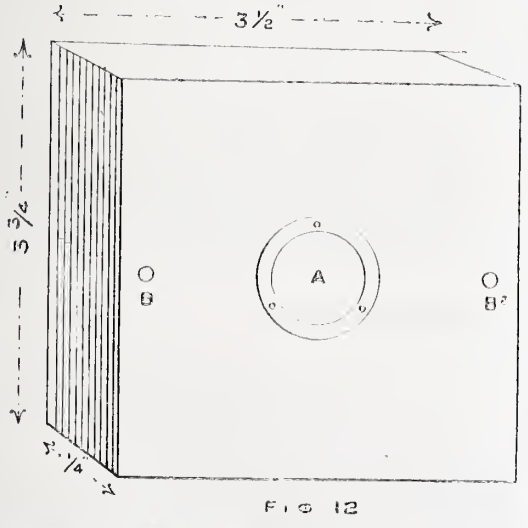


FIG 12

close to the frame F. Careful fitting is equally required here, to ensure ease in inserting and withdrawing the dark-slides, at the same time excluding all light. At B and B2 bushes are screwed in (of the usual camera pattern) to take set screws, the use of which will be seen when describing the swing arrangement. At T, a small screw turn-hook is fixed, to lock the dark-slide in place when withdrawing the shutter.

Having now completed the back itself, glue to the *inner* side of the frame F the large end of your conical bellows. These should possess a draw of about 8 in., and may be of either cloth or leather. If not made at home they can be obtained from Mr. Park for a small sum. To fit our camera, the large end should measure externally 5 in. and 4½ in., and the small end 3½ in. and 3 in. The front or lens-board to which on the inside the bellows are to be glued at their smaller end, and to the other side of which the lens flange is screwed, is shown in fig. 12.

It should either be made of ¼ in. stuff, framed up, or of two thicknesses of $\frac{15}{64}$in. wood, glued together in opposite directions of the grain, as precaution must be taken here also against warping. The aperture A must be cut out with a fret-saw, or centre-bit, to take the lens flange, and all lenses used should fit this flange, by means of adapters or otherwise. If a bayonet-catch flange can be used, so much the better. Why lens makers continue to turn out their productions with the slow and troublesome screw flange, is one of the many photographic conundrums. At B and B² two more bushes for set screws are to be fixed.

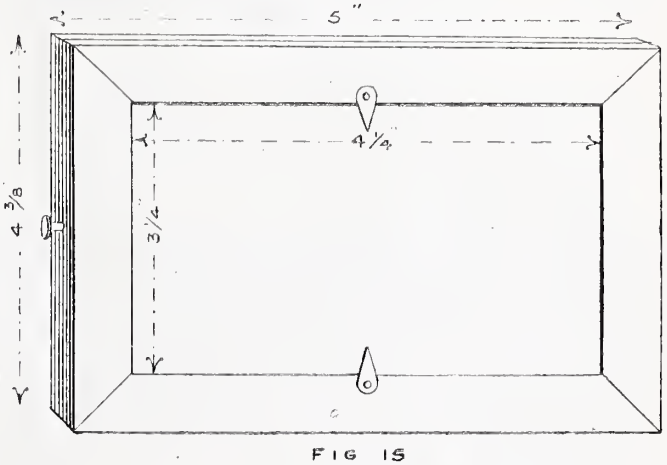


FIG 13

It may here be noted that all wood work should be smoothed, and all screws filed down flush, and finished off with sandpaper as the parts are finished. It must be left to the makers' judgment to what extent he may polish or otherwise complete the various parts. But the interior to the box, the frame F (fig. 11), and the side of the "front" (fig. 12), to which the bellows are glued, should be left dead black. A suitable material to apply for this purpose is made by mixing a little dry lamp-black in French polish. It dries quickly, a good matt black.

Having now completed the small camera, proceed to make the stage which carries the front to and fro for focussing. This consists of a base-board M, two inches broad, and of such a length from W to W that it will just slide along the bottom of our box, in grooves as shown by the dotted lines. This base-board must be so made that it will remain true, and need not be of thicker material than a quarter inch if framed up to prevent warping. K is the bush into which the clamping knob shown in fig. 5, p. 435, screws. The uprights which hold the "front" (fig. 12), and give the necessary rise and fall, are made of strips of half-inch stuff Y Y, with a rabbet cut in them as shown to take the "front," the thickness of which, we have seen, is ¼ in. These strips should be morticed into the base-board M, and further secured by stays, T, of sheet brass. L L are pieces

of sheet brass ½ in. wide, with a "toe" turned up at right angles to their face. This toe is screwed to the base-board M, and the strips L L are also screwed to the wood uprights Y Y, on one side as in sketch. It will now be seen that the camera front (fig. 12) slides up and down in these uprights, and is clamped at any point by the set screws (vide dotted lines), working in slots s s, which must be filed out of L L. The result of this arrangement is a rigid stage which carries the lens-board to and fro for focussing, while at the same time it gives a rise and fall motion sufficient for all purposes. The grooves in which this stage runs are formed by screwing strips of wood to the sides of the box, and they should be fixed after the stage is placed in its position, so that a good fit can be obtained. The focussing screen will not present any difficulty. It is merely a frame of ¼ in. stuff made to fit the camera back, and to run on the brass strips R.R. (fig. 11). The dimensions are shown in fig. 15. A piece of finely-ground glass is let in flush with its outer face, and is secured by turn buttons. As already explained, the register of this focussing screen must exactly correspond with that of the dark slides and roll-holder.

(To be continued.)

CHEMICAL PROCESSES IN

Toning Gelatino-Chloride Printing-out Paper

IN THE COMBINED BATH.

BY E. VALENTA.

(Continued from p. 13.)

A more favourable toning action than with the above described reactions is obtained by using the lead toning and fixing baths.

I prepared a solution of

Solution of hypo, 25 per cent	50	parts.
,, nitrate of lead 10 per cent... ...	50	,,

This solution was filtered, and then formed a colourless solution, which quickly fixed and toned gelatino and collodio-chloride prints. The colour of the print when dry is very similar to prints treated with a gold toning and fixing bath, and this method of toning is more advantageous than that by using the alum toning baths; probably the toning here also depends upon a sulphurisation of the image, but which in which case proceeds very regularly. The procedure in the lead toning is, according to my numerons experiments—

1. The lead salt, nitrate or acetate, is decomposed when mixed with aqueous solution of hyposulphite of soda, and hyposulphite of lead is formed.

$$Na_2S_2O_3 + Pb(No_3)_2 = PbS_2O_3 + 2NaNo_3.$$

The hyposulphite of lead dissolves in excess of hypo with the formation of the double salt, $PbS_2O_3 2Na_2S_2O_3$; the solution takes place especially freely in the presence of acetate salts.

2. The solution absorbs, by fixing, silver salts from the emulsion film, which form hyposulphite of silver and soda with the hypo.

3. The hyposulphite of lead is only slowly decomposed with the separation of sulphide of lead.*

$$PbS_2O_3 + H_2O = PbS + H_2SO_4.$$

The sulphuric acid set free in this reaction reacts on further quantities of hyposulphite of lead, and sets free hyposulphurous acid, which in its decomposition acts as a toning agent, since it causes a sulphurisation of the image.

$PbS_2O_3 + H_2SO_4 = PbSO_4 + H_2S_2O_3$ $H_2S_2O_3 = H_2O + S + SO_2$.

The aqueous solution of nitrate of lead always deposits sulphide of lead by longer standing, and is decomposed according to the above equations. If one adds sulphocyanide of ammonium, or potassium, to the solution, and filters, a clear colourless liquid is obtained, which also easily tones chloride prints, and which does not spoil so quickly as the lead and hypo solution.

Sulphocyanides increase therefore in this case also the keeping power of the combined toning and fixing bath.

If a solution of hypo in water is mixed with a solution of chloride of gold, hyposulphate of gold and soda (sodium auro-thiosulphate), chloride of sodium and tetrathionate of soda, according to the equation :—

$$8Na_2S_2O_3 + 2AuCl_3 = 3Na_2S_2O_3.Au_2S_2O_3 + 2Na_2S_4O_6 + 5NaCl.$$

Hyposulphite gold salts were used by Le Gray for toning silver prints; the sodium auro-thiosulphate is a tolerably stable compound which is not decomposed by dilute acids (Fordos and Gelis). It is decomposed by finely divided silver by the precipitation of gold and formation of hyposulphite of soda and gold. Since the commercial chloride of gold generally has a tolerably strong acid reaction, a decomposition of the hyposulphite of soda takes place when it is used, which causes as sulphurisation of the silver, also at the same time a toning.

So far as regards the action of the sulphocyanides in combined toning and fixing baths containing gold, they are undoubtedly, in the first place, fixing agents; then these salts act against the quick decomposition of the hyposulphite compounds, and conduce, as already mentioned, to a greater keeping power of the combined toning and fixing baths prepared with them.

The action of any combined toning and fixing baths, which for the most part consist of hypo, sulphocyanide, lead salts, chloride of gold and alum, or citric acid, which substances, as will be seen from the above table, are in most of the usual combined baths for chloride of silver emulsion papers, is explained from what has been said as follows:—

(1) As fixing agents act the hyposulphite of soda and sulphocyanide salts. These latter give when used with chloride of gold alone, as toning baths, frequently, prints which show different tones and are insufficiently fixed. With hyposulphite of soda and gold salts used simultaneously these disadvantages are avoided, and good fixation and agreeable tones are obtained. Sulphocyanides further make the toning and fixing bath more durable and prevent the quick decomposition of the hyposulphite compounds.

(2) Acids, especially citric and acetic acids, act by decomposing the hypo, and thus give rise to the formation of sulphide of silver in the image.

(3) Alum and lead salts act in a similar manner; here also the toning process acts principally by the conversion of the silver image into sulphide of silver.

Alum has besides this the necessary result of hardening the gelatine film.

The lead salts act in that they combine with the hyposulphite of soda. The hyposulphite of lead formed dissolves in excess of hypo, and this solution acts, by its slow decomposition, according to the above equations, as a toning agent, in consequence of the sulphurisation of the silver image. The greater the proportion of lead in the solution, the quicker the toning and the deeper the tone obtained.

(4) Gold salts act in the combined bath by the formation of hyposulphite of gold and soda, which directly combines with the silver of the image, which silver goes into solution and gold is precipitated on the image. If also lead or alum is also present in a toning bath, sulphur toning induced by these substances takes place.

THE ACTION OF OZONE ON VARIOUS TONED IMAGES.

Respecting the permanency of different images, experiments were instituted by exposing the same to damp and air containing ozone.

By this it was proved that prints on collodion or aristotype paper which have been toned by the aid of acid or alum, and hypo fixing solutions, possessed the least permanency, as even after two hours they appeared grey and yellowed.

Considerably better results gave the prints toned with nitrate of lead and hypo solutions; they withstood almost double as long and were not so strongly yellow as the former.

Gold-toned images behaved best in ozonised air, and, indeed, ordinary gold-toned albumen prints and pictures on celloidin and aristotype, which have been toned and fixed in pure hypo and gold baths, even after six hours, action they had, indeed, lost a little in warmth of tone, still showed, however, a photographic tone.

As a generally useful toning and fixing bath, the following may be recommended from these experiments:—

Water	500	parts.
Hyposulphite of lead	200	,,
Sulphocyanide of ammonium	25	,,
Nitrate of lead	10	,,
Alum	20	,,

The hypo should be first dissolved in the water, the sulphocyanide added, then the alum, and finally, the lead nitrate dissolved in a little water, the whole heated to 50 deg. C., allowed to settle, and before use 7 to 8 parts of a 1 per cent. solution of chloride of gold added to every 100 parts of this concentrated bath, and 100 parts of water. The bath will keep, and works very satisfactorily. Collodion prints should not be washed before toning and fixing; gelatine prints should be washed for a short time with pure water, and then immediately placed in the combined bath. To dilute the concentrated bath, old dilute gold baths, which contain little or no gold, may be used with advantage. — *Photo. Corres.*

* The sulphide of lead is immediately decomposed into sulphide of silver.

THE IMPERIAL PLATES

ARE IN GREAT DEMAND.

SPLENDID QUALITY ! POPULAR PRICES !

THOS. BEDDING, Esq. (British Journal of Photography), writes:

"I am charmed with your Plates."

Sample box of One Dozen ¼ or Half-Dozen ½ Plates, 1s., sent on receipt of remittance.

NOW READY.

THE IMPERIAL BROMIDE OPALS.

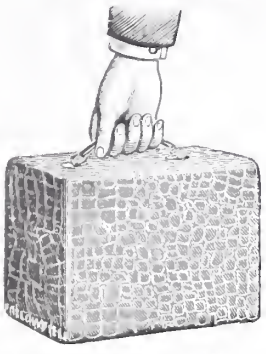
Finest and Best. Rapid and Slow.

Same Prices as our Extreme Rapidity Plates. Sample ½ doz. Plates 1/6 post free.

THE IMPERIAL DRY PLATE COMPANY, LTD.,

CRICKLEWOOD, LONDON, N.W.

"FALLOWFIELD" HAND CAMERA



Carries 12 Plates or Films—Full Size Focussing Screen—Instantaneous and Time Shutter—RR. Lens—Iris Diaphragm.

12 more Plates can be Inserted in Bright Sunlight.

Plates can be Exposed in any Order, and Different Rapidities Carried.



PERFECTION OF ELEGANCE, WORKMANSHIP, AND RELIABILITY,

£7 17s. 6d.

Fullest particulars in 24-page Pamphlet, Illustrated. Post free on application.

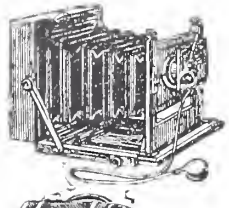
"Facile" Hand Camera at £3 13s. 6d. & £5 5s. Still "HOLDS THE FIELD" for VALUE & SIMPLICITY.

Ilford P.O.P. Paper in packets, 16 pieces, 6 x 4¼, 1s.; post free, 1s. 2d. Now Ready.

JONATHAN FALLOWFIELD,

CENTRAL PHOTOGRAPHIC STORES, 146, CHARING CROSS RD., LONDON

JOHN PIGGOTT.





CAMERA CASES.

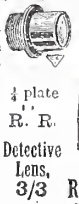
	½-plate	¼-plate	Whole plate
Solid Leather	11/6	12/6	19/9
Canvas Collapsing with sling	2/6	3/3	4/9
Postage	3d.	3d.	4½d.

"MY CAMERA."

Size 4¼ by 3¼, including Rapid Rectilinear Lens, folding Tripod Stand, and fitted with Pneumatic Shutter, and one Double Dark Slide.

	Price complete,		
Size 6½ by 4¾. Do. do.	"	"	4 10 0
" 8¼ " 6½. Do. do.	"	"	6 15 0
Double Dark Slides, extra, 4¼ by 3¼			0 7 6
" " " " 6½ " 4¾			0 11 6
" " " " 8¼ " 6½			0 17 6
Camera and one Double Back only, 4¼ by 3¼			1 12 0
" " " 6½ " 4¾			2 12 0
" " " 8½ " 6½			3 15 0

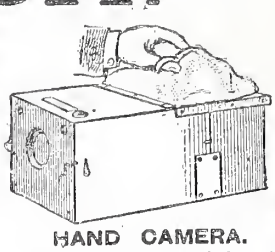
Postage, 3d



¼ plate R. R. Detective Lens, 3/3

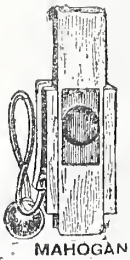


Rebounding Shutters, ¼ pl. 1/-, ½ 2/- Postage 3d.



HAND CAMERA.

For 12 ¼-plates, fitted with Samuel's Changing Bag, 21/



MAHOGANY DROP SHUTTERS

For Lenses up to 1⅛ in. diameter, with Pneumatic attachment, 3/-



THE WAISTCOAT-POCKET OPERA.

Height 2½ in., weight 5 oz.

This is a powerful Opera and Marine Glass, with a long range and good definition, and is fitted with a compass at one end, diameter of object lens 1 in. price 15/6.

Steel Frame Spectacles— per pair.

Convex only	7d.
Better Quality (concave or convex)	1/1
Light Frames	1/10
Pebbles	2/6 and 4/3
Best Finished Frame and Best Pebbles	6/6
Nickelled Curl Side, invisible frames	3/-
Cup or Deyes, any tint	3/10
Tinted, smoke or blue (flat glasses)	2/3

3d. extra for box and postage must be remitted with all orders for Spectacles and Folders.

GOLD FRAME SPECTACLES.

10 carat, glazed with best glasses, per pair 15/6



THE FOLDING TRAVELLER'S LAMP

The most portable Lamp ever made Price 3/- each.

Extra Lights for ditto, 2d. each. Postage 4½d.

Cheap Cardboard Lamps—(Folding) 6d. each, Postage 3d.

Do. with tin top and bottom—1/6 each, postage 4½d.



closed

Please send for "My Camera, and How to use it," by JOHN PIGGOTT, List of Photographic Accessories, FREE.

117, CHEAPSIDE & MILK STREET, LONDON

CROSSED SWORDS



ALBUMENIZED AND SENSITIZED PAPERS.



MANUFACTURED BY THE

United Factories of Photographic Papers, Limited, DRESDEN, GERMANY.

Prepared on Rives Plain Paper, watermarked B F K Rives

MOST RELIABLE AND UNIFORM. TO BE HAD OF ALL PHOTOGRAPHIC DEALERS.

Sole Wholesale Agents, A. M. ZIMMERMANN, LONDON.

A Holiday in Norway.

Photography Among the Fjords.

(*Continued from page* 11.)

III.—THE GEIRANGER AND HJORUND FJORDS.

The Seven Sisters.

Most of those who had been to the Mangefos the night before knew nothing the next day till they were well on their way up the Geiranger Fjord, having passed Molde and Aalesund again while lapped in blissful slumber. Whether the trip was so arranged, or whether it was the cumulative effect of the magnificent scenery, it would be difficult to say; but each day the fjords appeared to get grander, and in every fjord the height of admiration seemed to be reached, only to be eclipsed by the scene visited on the next day and in another fjord. Still for those who have once seen it, the Geiranger will always remain a name to charm with. It is a fjord of sudden surprises, of towering hills and wonderful waterfalls. The great cliffs rise sheer out of the water four or five thousand feet in the air, and their grandeur is greatly enhanced by the narrowness of the fjord. To all appearance—though in Norway, especially, appearances are deceptive—it cannot be more than a quarter of a mile from shore to shore at places. Between these giant hills, then, whose beetling brows threatened to close in and crush the rash vessel that had ventured to pass between them and even to awake their echoes with its steam whistle, the *City of Richmond* slowly moved on its way to Merok. Many a time it seemed as if the next corner could never be rounded; yet it was safely passed, and gradually the feeling of awe that had been impressed upon us wore off, and we were able to note more closely the myriads of falls that silver-veined the valley's sides. White as the snow from which they came, they leaped and slipped and drifted and plunged down the rocks and through the firs, some idly wasting themselves in mist, dissipating themselves in air because of the height from which they fell; others rolling rapidly and falling musically into the still deep waters of the fjord, and others again quietly stealing by zig-zag ways from ridge to ridge and sparkling through the trees. The lines in "The Lotos-eaters" were irresistibly recalled—

> "A land of streams! Some, like a downward smoke,
> Slow-dropping veils of thinnest lawn, did go;
> And some through wavering lights and shadows broke,
> Rolling a slumbrous sheet of foam below."

And again,

> "the slender stream
> Along the cliff to fall and pause and fall did seem."

Finally the *Syv Sostre*, the Seven Sisters of incomparable loveliness, were reached, the sun falling full on their silver tresses and giving them a dazzling brilliancy that almost took one's breath away.

The Mountains of Merok.

Along this fjord especially our photographers were busy. The ship had perforce to proceed very slowly, and the waterfalls could not be resisted. Men even gave up their lunch to get on board and try a shot at an exceptionally fine *fos*, and the Seven Sisters had to bear the brunt of a whole battalion of cameras, both of the ordinary and of the detective kind. But all the sharp, sudden corners were safely passed at last, and at the end of the eastern arm of the fjord we anchored off the hamlet of Merok. Merok itself is nothing, but its surroundings are of what the guide-books call "unsurpassing grandeur." Down through the village itself, starting from far up the mountain side, thunders a foaming cataract into the fjord below. This is the *Storfos*, and there are few finer falls to be found in the country. The actual volume of water must be enormous, and the effect is heightened by the rich colouring of the mighty hills around, and the tender flowerets that spring in the damp verdure on the water's brink all down the course of the fall. At Merok we first made acquaintance with a *sæter*. Climbing up the steep zigzag that leads to *Udsigten* (the view), we noticed a side path leading up through hilly fields and mountain woods to some huts far up the steep. These, we found, were the *sæter*, or mountain farm dairy. A rough and toilsome path showed the way up which the cattle are driven to feed on the higher pastures when those below fail. Fancy fetching the milk for one's morning coffee down from a dairy two or three thousand feet in the air! From *Udsigten* a magnificent panorama of mountain scenery is, indeed, to be obtained. The Geiranger Fjord seems to end in a stupendous amphitheatre of hills. All round the vast circle the snowy summits rise, dark crags piercing through the maiden snows that cover all the hollows, and standing out in rugged splendour against the blue of heaven, while the lower slopes are covered with ash and hazel and feathery birch, and the lichened rocks glow in the strong sunlight with a thousand tints of grey, and brown and gold.



ORSTENVIK, FROM THE FJORD.

From Sæbo to Orstenvik.

From Merok we returned through the Geiranger, but at night this time—though there were many who stayed on deck for a last look at the loveliness of the Seven Sisters—and entered the long and narrow Hjorund Fjord, anchoring off Sæbo. There is a magnificent drive from Sæbo to Orstenvik, right across country, combining the delights of steeplechasing and tabogganing with the pleasure of bowling along at a handsome pace through a charming pastoral valley, enclosed by wild cliffs and wooded hills. This drive of nearly twenty miles most of us took, the boat meanwhile going round to Orstenvik by way of the Vartdal Fjord. The road was generally very good, but it would be well for nervous people to get out and walk at many points along it. For those who can forget danger, and trust in the ponies' sure-footedness, there is a glorious exhilaration in flying down a sharp descent with a precipice on one hand going down hundreds of feet into the lake below, and birch clad hills soaring far up into the blue on the other. The earlier part of the road,

from Sæbo to Vatne, lay through softer scenery than we had yet seen, the broad green valley,

"looking to the South and fed
With honey'd rain and delicate air,"

opening out in many a winding vale and meadow, watered by rippling streams from the purple hills. On these the eye dwelt gratefully, resting awhile from the strain of grasping the mountain peaks. But after Vatne, and for almost all the rest of the way to Orstenvik, the *stolkjærre* rushes over the shoulders of the hills, and bumps over bridges and sweeps along by the brink of the stream, till it subsides into respectability, and suddenly enters Orstenvik by a good and level road. Orstenvik furnished us with many pleasant memories. It would be a charming place to make use of as a holiday centre, and Herr Svendsen's hotel is of the best Norwegian type. It was here that a conspicuous instance of Norwegian honesty came under our notice. A sovereign was accidentally left on the table by one of the passengers in payment for a cup of coffee, and forgotten. The next day it was returned to the Captain, though many a mile had to be traversed to do so. But the Norwegians, as a rule, are the finest peasantry in the world, utterly unspoiled as yet by the tourist, and full of sturdy independence and frank courtesy. We went into one of the houses here and saw the women making and baking the national *flatbrod*, thin circular cakes of dark colour, but by no means unpleasant flavour. They laughed heartily at our broken Norse, so heartily that the cakes were forgotten and burned, and, fearing Alfred's fate, we took our departure, and visited the church, prettily built of pine wood and grey stone, and painted white. Looking closely at the walls, it was evident that they, as well as the bridges we had noticed before, were quite innocent of mortar or cement. The stones were simply laid one upon the other, and so carefully were they chosen, and so nicely fitted that the structure stood perfectly solid and firm.

MEMORIES OF ORSTENVIK.

In one of the little shops near by an observant member of the party spied some conversational sweetmeats with Norwegian mottoes of tender and amorous significance printed upon them. A purchase was at once made for a few *ore*, and great was the fun that ensued. "Are you engaged?" may be a very blunt and rude question in English, but who could complain of the caressing tenderness it assumes in Norwegian, "*Er de forlovet?*" There is hardly the same grace about the look of "*Smoke pige, bliv min!*" it is true, but the actual pronunciation may be made to very prettily express the entreaty "Be mine, sweet maid." About "*Giv mig et kys!*" there can be no mistake, and evidently the maiden's coy reply is contained in "*Hvadfor ikke det?*"—"Why not?" Our last and best memory of Orstenvik was gleaned at the quay. The school children, boys and girls, were gathered there to see the strangers off, and, led by a fair-haired maiden, with soft shy eyes like a fawn's, they sang us snatches of their national songs in the hush of the golden afternoon. Pure and clear as chiming bells the voices rose and fell in strangely sweet cadence, with never a harsh note to mar their perfect harmony. It was like the soft sighing of the wind amongst the pines, like the melody of the mountain streams, musical and silver-clear, but with ever an undertone of sadness. They sang their National Anthem, set to the same tune as "God save the Queen," and with that we parted, their voices still seeming to linger in the soft warm air. From Orstenvik our course lay westwards through the islands out into the open sea, and down the coast till we came to the great Sogne Fjord. It was midnight by the time we entered the fjord, though only our watches could make us believe it. On the way great excitement was caused by the rising of the moon, large and lurid, above the horizon in the far east. Captain Bentzon, being appealed to, mischievously gave his authority to the hesitating statement that it was the midnight sun, and great was the number of those that were hoaxed. But there was no mistake about the rainbow that spanned the heavens just before the sun set. Out of the sea it rose and into the sea it fell; and where it rose and fell the waves were flooded with the brilliant colours of the soaring pillars, glowing with unusual brilliancy in that clear air.

(*To be continued.*)

The Monday afternoon "At Home" is discontinued for the present, but will be resumed on Monday, the 5th of September.

Gelatino-Chloride of Silver Printing for Paper and Opals.*

BY H. WADE.

THE process of printing out on opals is not a new one—rather the opposite—as will be seen by looking at some of the old journals, etc.; but the photographer of the present time appears to have forgotten its existence altogether, and employs the bromide opals instead. In addition to the monotonous uniform black tone presented by bromide opals, they seem to have a dead sunken-in appearance.

And now look at the cost, the lowest price of half-plate bromide opals is 5s. 6d. per dozen, while 3 oz. of chloride emulsion is 5d., sufficient to coat one dozen opals; plain opal glass, half-plate size, costs about 2s. per dozen.

The ease of acquiring any tone ranging from red to a bluish-black offered by the gelatino-chloride process, is also another consideration. As to permanency, if the plates are well fixed and washed, I see no reason why they should not be equal with the bromide.

The following is the formulæ which I have found best for the emulsion; being simple in its constituents and easy to manipulate. For the solutions take:—

No. 1.	
Silver nitrate	¼ oz.
Citric acid	1 drm.
Water	1 oz.
No. 2.	
Gelatine	¾ oz.
Water	6 oz.
No. 3.	
Alum	20 gr.
Rochelle salts	20 gr.
Ammonium chloride	10 gr.
Water	1 oz.

Dissolve Nos. 1, 2, and 3 in separate vessels, then mix Nos. 2 and 3 together, and gradually add the silver solution to the salted gelatine, very slowly stirring during the whole time, so as to obtain a fine chloride of silver. If it is added in a mass the particles are apt to be coarse. When well mixed, heat up to 150 degrees, and filter through two thicknesses of muslin. (With this emulsion, washing is dispensed with.)

Other formulæ may be used, but for simplicity and beauty of results, I prefer the one just given.

See appendix A for citro silver emulsion.

Before proceeding with opals I will describe a method of coating paper suitable for printing out.

The paper should first have a coating or sizing made by dissolving ½ oz. of gelatino in 10 oz. of water and adding 5 gr. of chrome alum.

Porous or soft paper should be immersed in this solution, but if a hard make of paper is used it should only be coated on the smoothest side. If a very smooth surface is desired, it is better to apply a second coat after the first has been allowed to dry.

When hanging the sheet, take up the opposite corners of the paper to those previously laid hold of for the first coating, in order to have it even. When dry, roll around a ruler or something similar, the side to be covered with emulsion being outwards. This coating of gelatine is perfectly insoluble in hot water.

The final support employed for single transfer in the carbon process, may be used by those who wish to avoid the risk of not obtaining an even surface. The paper is suitable and the coating is very even and quite insoluble.

The following remarks on coating the paper with the emulsion will apply to coating the paper on *one side* with the gelatine.

Pour the emulsion into a shallow porcelain dish, which for preference should be standing in a larger dish filled with hot water, so that the emulsion may be kept from congealing too rapidly.

Take the paper to be coated by the two opposite ends, and place it on the emulsion. Let it stop a few seconds, then lift up one corner, and afterwards the other, to see if there are any air bubbles. Should these be observed, touch them with a glass rod

* Read before the Manchester Camera Club.

or match stalk, to burst them. When the paper lies quite flat, take two uprights (a book or anything of the right size and shape will do) and place them at each side of the dish, about one inch higher than it. Then place a piece of glass, larger than the paper to be coated, on the uprights, and over the dish, but about two inches from one end. Lift the paper up by two corners, and draw it slowly over the glass and on to it. Leave for a few seconds to set, then hang it up in a warm dark place, free from dust, to dry.

After the coating, the operations of toning, etc., are identically the same as opals, which I will now describe.

The opals to be coated should first be examined to see that they are perfectly even. If not, they must be ground with emery until the surface is uniform. They should also be quite free from grease or dirt. Soaking from half-an-hour to one hour in a weak solution of hydrochloric acid and water, and finishing with a clean rag, will effectually cleanse them.

Coating opals is a "knack" which needs to be acquired by practice; but the easiest way, I consider, to deal with ground opals is to pour the emulsion in a pool in the centre of the plate, then guide it with a glass rod or the middle finger (mind it is perfectly clean) to the edges. Pour off the superfluous emulsion into a jug, leaving only a thin film on the plate.

Place the opal on a level surface to set.

Smooth, or flashed opals are much easier to coat than those with a ground surface, and the emulsion runs to the corners without any guiding.

When set, place the opals on a rack and leave them in a dark place to dry.

If placed in an ordinary room, after they have been prepared in the evening, they will be ready the following morning for printing.

All operations, including the preparation of the emulsion and coating, should be performed by gaslight or weak daylight.

Instead of a jug, a small tea-pot may be used advantageously in coating the opals. The spout coming from below the surface prevents air bubbles from being poured over the plate.

One of the advantages of making your own emulsion is that you can alter it to suit your negatives. The one given is a medium emulsion, suitable for negatives of ordinary density—it may be termed a rather thin quality.

If we wanted to print from a *very* thin negative, we should make up an emulsion with fifteen instead of ten grains of ammonium chloride; and for hard negatives *vice versa*.

If the opals, when prepared, are kept wrapped up in oiled paper, they will keep for two or three weeks, but they are better used fresh.

It is rather difficult to examine them during printing, as we cannot turn them back like paper; but it becomes easy enough after a little practice, either by taking the opal away from the negative completely, and if not sufficiently printed, to superimpose it carefully on the negative again until the image is fully printed; or by looking at the opal through the negative while in the frame, towards a strong light. Another method is to coat a piece of paper with the emulsion and, selecting a negative of the same density as the one to be printed, place the paper behind it. By placing both opal and paper out to print side by side you will be able to see by the paper being complete that the opal is also dark enough.

The printing of both should be continued until they are a little deeper than would be required for an albumenised print.

After printing, wash until all free silver is removed; about four changes of water.

The opals and prints I have brought with me have all been toned in the toning-bath recommended by the Ilford Company for use with their chloride paper. An acetate bath may be used —appendix B. To obtain a purple tone, withdraw the opals from the bath while there is a shade of brown in them. They dry with a much colder tone than they present while wet.

Immediately the required stage has been reached, place them in a 20 per cent. solution of salt and water, and after a rinse, fix in a 10 per cent. of hypo for ten minutes.

If a hard make of gelatine is used (such as Hienrech's), an alum bath is not required; alum being one of the constituents of the emulsion.

The washing need not be continued so long as for albumenised prints one hour for the opals and two hours for the paper, in running water, is suffic

The process, while taking rather long to describe, is a simple one, and I think that if any try it they will be agreeably surprised at the results.

APPENDIX.

A.—Citro-Silver.

No. 1.

Silver Nitrate	75 gr.
Water	1½ oz.

No. 2.

Gelatine	80 gr.
Water	½ oz.

No 3.

Sodium or Ammonium Chloride	21 gr.
Potassium Citrate	21 gr.
Water	½ oz.

When all are mixed add

Alcohol	2 drm.
Citric Acid	3 gr.
Chrome Alum	1 gr.

B.—Acetate Bath.

Stock.

Acetate of Soda	2 drm.
Bi-Carbonate of Soda	20 gr.
Gold	1 tube
Water	5 oz.

Bath.

Water	20 oz.
Stock	½ oz.

For about every 80 prints toned, add 1 to 2 drams of stock.

Reviews.

Fortschritte in der Photographie by J. M. Eder and E. Valenta An abstract from the *Jahrbuch der Chemie.* Published by H. Bechhold, Frankfurt a/M.

This is a brief retrospect of the advance of photography during 1891, compiled by Eder and Valenta, for Meyer's Jahrbuch der Chemie. In the eighteen pages the compilers have done their work well though briefly, and if the remainder of the Yearbook is up to this standard it will be worth reading.

Bromide Enlarging and Contact Printing: How to do it. By A. R. Dresser. Published by the Fry Manufacturing Co, Chandos Street, Charing Cross, W. Price 6d.

The author gives us brief but practical directions for using bromide paper, and unencumbered as the book is with unnecessary matter it will be of considerable service to beginners in this branch of work. Where required diagrams are inserted to make clear directions clearer still.

Photographic Enlargements: How to Make Them. By George Wheeler. Published by Wheeler and Co., 46, King Street West, Manchester. Price 1s.

Mr. George Wheeler has given us in this little brochure of 130 pages, a practical common-sense handbook to enlargement-making. Every statement bears the hall-mark of experience, and everything is told in a plain straightforward manner, which is extremely easy of comprehension. After a brief preliminary note as to why enlargements should be made, we have the usual table of distances, then a section devoted to the paper, and methods of keeping it; we then come to the negative, and this is carefully considered; then the pros and cons of daylight and artificial light. Enlarging by daylight and the necessary apparatus; and how to make the same is then considered, and clear diagrams are introduced. Artificial light receives due notice, and we then come to the actual working operations of exposure, printing in skies, vignetting, developing, clearing, fixing, washing, etc., and then the final hints on spotting and retouching, and defects and their considerations. The work is well printed and well written, and deserves recognition from all who desire to make enlargements.

The Theory of Development.*

IN RELATION TO THE ESSENTIALLY ELECTROLYTIC CHARACTER OF THE PHENOMENA AND THE NATURE OF THE PHOTOGRAPHIC IMAGE.

By Mr. Henry E. Armstrong, F.R.S.

Professor of Chemistry to the City and Guilds of London Central Institution.

No pretension to be even a professional amateur photographer is made by the writer of these lines. At intervals extending over a considerable period he has exposed and developed plates in a conventional and rule-of-thumb manner, but about a couple of years ago an awakening of his photographic conscience took place, and he began to ask himself whether he had any true understanding of what he was doing? Finding that he had not, and that the text books afforded but cold comfort, he bethought him that he was working in a manner utterly unworthy of a member of that fraternity which seeks to give its meaning to the watchword by which it is led—Science: "Knowledge co-ordinated, systematised, and arranged."

To-night he will attempt but a very general confession of the faith that is beginning to arise within him after much pondering over photographic literature, and after a couple of years of study and experience of the behaviour on development of plates exposed in the field at all seasons, and under a considerable variety of conditions, one chief object in view having been to arrive at the explanation of the controlling influence exercised by the restrainer, and the accelerating effect of alkali.

Thus much by way of perface. A prologue may be added to facilitate the explanation of points of fundamental importance.

In the year 1868 De la Rue and Muller described a new form of voltaic cell, consisting of a cylinder of silver chloride cast around a silver wire as negative element opposed to a zinc rod as positive element, placed side by side in a tube containing a solution of a chloride—ammonium chloride, being that ultimately preferred. [It is worth while noting that they speak of silver chloride as so poor a conductor of electricity that it may be regarded as an insulator, and that on this account it is necessary that the silver wire around which the chloride is cast should project through it into the solution. On the other hand, it is also noteworthy that even solid silver chloride may be electrolyzed, and that directly its temperature is raised sufficiently to make it viscous, it is an exceedingly good conductor.] In such a cell the silver chloride remains unchanged until the circuit is completed by joining the zinc and the silver by a conductor of electricity; immediately this is done a current passes, and simultaneously zinc dissolves and silver chloride becomes deprived of chlorine. Although ammonium chloride is used in the cell, in considering the nature of the interchanges, it is permissible to assume that hydrogen chloride—one of the constitutents of ammonium chloride—is the active agent; for, as will be shown later on, at the same time that hydrogen chloride is being withdrawn from ammonium chloride and used up, hydrogen chloride is being produced and converted into ammonium chloride, and as the two actions balance each other, it is unnecessary to consider them.

Supposing that silver, and not silver coated with silver chloride, were opposed to the zinc in the cell, the latter would dissolve as chloride; but hydrogen would be given off at the surface of the silver. In this case the current would rapidly fall off, the cell would become *polarised*, in consequence of back action setting in between the hydrogen coating the silver and the zinc chloride, which would lose chloride. As it is reversible, the change occurring under such conditions may be written—

$$Zn + 2\,HCl \qquad Zn\,Cl_2 + H_2,$$

i.e., the equation may be read either backwards or forwards. In the presence of silver chloride in contact with the silver, this back action or polarisation is prevented, no hydrogen ever being set free, as at the same time that the zinc combines with chlorine from the solution an equivalent amount of hydrogen combines with chlorine of the silver chloride, and thus the amount of chlorine, as ammonium chloride in solution, is maintained constant. We, therefore, may represent the state of affairs in the cell before and after the current passes in the following manner:

Zinc plate	ClH ClH	ClAg ClAg	Silver plate

Cell at Rest.

= Zinc plate	Zn	Cl Cl	HCl HCl	Ag Ag	silver plate

Cell in Action.

The electrical pressure developed in such a cell—its electromotive force, or E.M.F.—is about 1·05 volt; the theoretical value may be calculated in the following manner:—

It is known from thermo-chemical measurements that the dissolution in dilute muriatic acid (HCl: H_2O = 1 : 200) of sufficient zinc to displace 2 grams of hydrogen would involve the evolution of 34,200 gram-deg. C.-units of heat.

If this amount of hydrogen and the equivalent amount of chlorine were to interact, and form hydrogen-chloride, 78,640 units of heat would be liberated; while by the interaction of the equivalent amounts of silver (216 grams) and chlorine only 58,760 units of heat would be liberated. Consequently 78,640 — 58,760 = 19,880 units of heat would be developed if the hydrogen, instead of being liberated, were to reduce silver chloride, and the total heat evolution resulting from the conversion of the zinc into chloride at the expense of the chlorine withdrawn from the silver chloride would be 19,880 + 34,200 = 54,080 units. The corresponding E.M.F. is found by dividing by 46,000, a constant which need not be explained here; hence—

$$\frac{54{,}080}{46{,}000} = 1{\cdot}18 \text{ volt.}$$

The difference between this and the observed value is attributable to the fact that the conditions for which the calculation is made are not precisely those which obtain in an actual cell; probably the zinc chloride is not fully hydrated in the electrical circuit, and the heat of formation of some less hydrated chloride should be taken for the purpose of the calculation.

The extent to which electrolysis of silver and hydrogen chlorides takes place, *i.e.*, the amount of zinc dissolving and of silver chloride reduced in the cell depends on the resistance in the electrical circuit, since—

$$C = \frac{E}{R}$$

where C stands for current, E for electromotive force, and R for resistance. This is the well-known *Ohm's Law*: its importance in connection with photographic phenomena has been strangely overlooked.

To apply this law to chemical changes, it has merely to be borne in mind that C may also be taken as meaning amount of chemical change, and it is scarcely necessary to point out that the most exact method of measuring an electrical current consists in determining the amount of chemical change which the current produces by weighing the deposit of silver obtained on passing it through a silver nitrate solution. E, as before, is the electromotive force corresponding to the interchange, and R the resistance, not of the liquid as a whole, however, but of the circuit within which the interchange is effected, which may be quite a different thing, and unfortunately at present is beyond measurement.

It will be noted that the E.M.F. of the silver chloride cell is the sum of two E.M.F.'s, the one developed in the formation of zinc chloride from zinc and hydrogen chloride, the other in the reduction of silver chloride. In any case, in order that action may occur, it is essential that the change, on the whole, be one in which energy is set free; but this is not necessarily the case in all parts of the change when it is resolvable into parts. This is a consideration of primary importance in connection with the theory of development, and may be illustrated by the following examples:—Zinc readily dissolves in diluted sulphuric acid if coupled with a less positive conductor. Copper, however, does not, even if the acid be boiled; but copper dissolves readily enough if oxygen be passed into the heated diluted acid. Thermo-chemical measurement shows that while the dissolution of sufficient zinc to displace 2 grams of hydrogen from sulphuric acid is attended with a liberation of energy expressed by the number 37,730 if represented in heat units, the dissolution of the equivalent amount of copper could only take place if energy were supplied to the extent of 12,400 heat units; but, as oxygen and hydrogen interact, forming water, with liberation of energy to the extent, measured in heat units, of no less than

* Read at the Camera Club Conference.

The Amateur Photographer

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 406. Vol. XVI.] FRIDAY, JULY 15, 1892. [Price Twopence.

Our Views.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Monday Afternoon "At Home" is discontinued for the present, but will be resumed on Monday, the 5th of September.

Our Views.—"Sun Pictures"—Photography at Home Competition Awards—American Journalism—The Convention—The late Mr. C. V. Shadbolt.

Letters to the Editor.—The Blister Fiend (P.)—Correct Tones (Darroch).

Reviews.—The Photographer's Companion (Dunmore)—*Photography* Annual (Iliffe).

Apparatus.—Watkins' Exposure Meter—Everybody's Hand-Camera.

Articles.—Elementary Photography (Hodges)—The Lantern, and How to Use It (Norton)—A Holiday in Norway.

Societies' Meetings.—Eastbourne—Hackney—Harlesden—Kensington and Bayswater—Leytonstone—Lewes—North London—North Middlesex—Sheffield—South Manchester—South London—Southsea—Tunbridge Wells.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months, 5s. 6d.....	Twelve Months,	10s. 10d.
Postal Union	„ „ 6s. 6d.....	„ „	13s. 0d.
Out of Postal Union ..	„ „ 7s. 9d.....	„ „	15s. 8d

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 38.—"Inland Scenery with or without Figures." Latest day, July 25th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc, on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, August 19th.

It has always been our custom to issue annually a Special Number containing the choicest pictures sent in to our "Holidays with the Camera Competition." Hitherto these special numbers have been illustrated by means of half-tone or process blocks. Our publishers are now ready, as they announce on another page, to supply copies of the Special Number of the 1891 "Holidays with the Camera" competition, which has been issued under the title of **"Sun Pictures from many Lands,"** and we venture to think this is the most artistic of any Special Number which has yet appeared from our office.

"Sun Pictures" contains two frontispieces, "Near Upminster," by Francis Powell; and "St. Gingolph," by S. Francis Clarke, both being finely reproduced in Woodbury-gravure. In the seventy-nine pages of letterpress, comprising the accounts of the competitors' tours are included no less than thirty-six collotypes, viz.:—

"Children Crossing the Allan;" "The Allan Water;" "The River Leith, Callander." By Francis Powell.
"On the Lynn;" "Salisbury Cathedral from the River Avon.' By Rev. T. Perkins, M.A.
"H.M.S. Ruby;" "Portsmouth Harbour." By J. E. J. and M. Ellis.
"Ben Lomond, from Rowardennan;" "Skiddaw, from Bassenthwaite Lake." By W. Lamond Howie.
"Constantine—The Arab Market;" "Biskra—A Caravanserai.' By Cyril S. Cobb.
"Lotefos;" "Stalheim." By R. H. Llewellin Roberts.
"Elephant Convoy;" "A Batch of Chins." By Surgeon A. G. E. Newland.
"Dean Odo's Doorway;" "Great Cross, Clonmacnoise." By D. Goodwillie.
"The New Albertina—Coming In;" "A Storm." By A. R. Dresser.
"Criccieth Castle from Blackrock." By J. Oswell Bury.
"Audermatt;" "At Bellagio, Lake Como." By E. W. Bassano.
"Derwentwater;" "Derwentwater." By C. W. Davies.
"Beaver Pool, Bettws-y-Coed;" "A Peaceful Spot." By Harry Holt.
"A North Hinckley Cottage;" "Divinity School, Oxford." By C. Court Cole.
"Cortina;" "Street in Sterzing." By Alfred Stieglitz.
"An Autumn Morn;" "Ready for School." By John H. Gear.
"The Greek Theatre, Taormina;" "The Theatre of Herodus Atticus, Athens." By Ringrose Atkins.
"Framwellgate Bridge;" "The Crypt." By H. Meynell.

Each illustration is in itself a picture. They are, in fact, the pick of the prints sent in to the competition, and being reproduced in collotype, though small, they form a most valuable guide, not only in composition but also in light and shade, as to the style and class of work required for such competitions.

Another feature, and one of which we think we may

justly be proud, is that this is the first time that this method of illustration, the interspersion of collotypes with letterpress, has ever been attempted in England.

The edition is limited, and therefore we strongly advise all our readers who wish to secure a copy of this so far unique publication, to secure the same at once, as a second edition cannot be issued. The work forms an exceedingly handsome *edition de luxe*, which will form a really artistic addition to any worker's library.

MESSRS. H. P. ROBINSON AND VALENTINE BLANCHARD have during the past week adjudicated upon the prints sent in to our "Photography at Home" Competition, with the following result :—

Gold Medal.. MRS. S. FRANCIS CLARKE, Louth.
" " CLARENCE B. MOORE, Philadelphia, U.S.A.

The judges, wisely, we think, refrained from discriminating between these two sets. Mrs. Clarke's pictures are certainly some of the finest figure slides (platinotype) we have ever seen, and we heartily congratulate her upon having won one of the premier prizes in this competition, and although it is well known that she is one of our foremost workers in this department no one will begrudge her this Gold Medal, a companion to that won in the Ladies' Competition. Mr. Clarence B. Moore's pictures are also platinotypes; two especially calling for especial mention from the judges.

Silver Medal .. A. J. LEESON.
" " .. ALFRED STIEGLITZ, New York.

The most striking picture in Mr. Leeson's exhibits is a perfect example of combination printing, and we unhesitatingly say that no finer example of this by no means easy process has ever been seen. Mr. Stieglitz's prints show extreme care both in selection and technique.

Bronze Medal .. FRANCIS POWELL, Dunoon.
" " .. EDGAR G. LEE.

Four of Mr. Powell's prints are made to tell a tale, "The Days when we were Young," and we need not say that, like all the work from this competitor, are extremely careful and very artistic. Mr. Edgar G. Lee wins with some charming hand-camera studies, which might have been made more of in the printing.

Certificate .. J. P. GIBSON, JUN., Hexham.
" .. A. L. SPILLER, Hampstead.

Mr. Gibson, jun., is well known to us for a very careful young worker, and his little quarter-plate prints have all been carefully thought out and carried out. Mr. Spiller was exceedingly happy in one sitter, who figures more than once in his prints.

We intend to issue a Special Number, embodying a selection, if not all the prize pictures, and we hope to be able to produce them of large size, and thus make a second number, and worthy companion to "Sun Pictures."

WE wish to draw the attention of our readers to the following announcement :—

In no case will the Proprietors of the AMATEUR PHOTOGRAPHER undertake to buy or sell any goods on commission, nor will they be responsible for the safety of any negatives or prints sent to the Editor of the AMATEUR PHOTOGRAPHER for any purpose whatever, although all reasonable care will be taken of the same.

The Editor claims the right of refusing any print, lantern slide, etc., sent in for competition, without assigning any reason for such refusal.

The peculiar style of journalism so prevalent in America is evidently gradually gaining ground here. The following appears in one of our contemporaries of last week :—

"One of the most curious things which has appeared in the photographic press for some time was 'A. R.'s' advertisement of his Kodak in our Emporium last week. 'A. R.' started button pressing without any previous knowledge of photography, and expected to get pictures every time. His frank avowal of failure and explanations of the reasons why are refreshing nowadays, when men hide their failures and pose as know-alls, and will form a good object-lesson to hand-camera beginners—for they are as applicable to any hand-camera as to the Kodak—and help to show such that the hand-camera is not a sort of infernal machine with which, by turning the handle, they can do the photographically impossible. *Judging by the cart-loads of letters which our Emporium department have been forwarding to 'A. R.' since the advertisement appeared*, it is plain that his frank avowal of incompetence has not frightened intending users of the Kodak, for the rush after that No. 4 has been just immense."

We have received the following information from the advertiser "A. R.," referred to in the above extract :—

"In answer to my advertisement, signed 'A. R.,' I received only three letters, one offering me a toy boat, the second offering me some lantern-slides in exchange, and the third another camera. *This is absolutely all the response I got for my long advertisement.*"

The italics in both extracts are ours. *Verbum sap.*

WE have received a letter from Mr. S. Graves, of Littleborough, defending himself from the statement in our issue of last week. Whilst we regret if we have done him an injustice, we shall be glad to hear from any of our readers who have had dealings with him, and the matter is now being diligently enquired into, and we hope to report next week.

THE Photographic Convention was opened in the Hall of the Royal Scottish Geographical Society, Edinburgh, on Monday, at 6 p.m., by the President, Mr. Geo. Davison. The full text of the President's address and report of the meeting will appear in our next.

It is with great regret that we have to record the decease, on Friday last, of Mr. Cecil V. Shadbolt, from injuries received at the unfortunate balloon accident at the Crystal Palace.

Letters to the Editor.

THE BLISTER FIEND.

SIR,—Just a few more remarks upon a subject which has very nearly been thrashed out. I am glad to notice another person has tried "John Browning's" recipe with success, but it is acknowledged by that person that the spirit was used after toning, instead of before washing out the silver nitrate, which makes a vast difference. If the spirit can be employed after toning with the same result as "John Browning" claims for it, it may possibly be a safe remedy. Your correspondent, "John Browning," by the two questions in his letter, suggests that possibly my failure was due to not strictly following his advice, and I answer, I am not quite such a flat, anyhow in following advice for the safety of a thing which, if ruined, means loss of money, as the state of my prints mentioned in my last letter might cause your correspondent to think I am. I am not prepared to say whether the spirit I used was pure or not, but I made the stipulation, when buying it, that it was to be the best. I washed the prints in an ordinary circular washer, with the water full on, for a considerable time. I felt convinced I had taken the prints out of the water too soon before toning, from the greasy feeling of their surface, but the amount of washing I gave them did not in the least degree eliminate the grease, so I thought I would risk ruining them by placing them in the toning

bath. Considering my procedure before fixing, I did nothing short of following your correspondent's advice. However, I will try again, working in the way suggested by "H. S. Large," and also by "John Browning's" method, using fresh spirit, and the best that I can procure. With apologies for trespassing upon so much of your space.—Yours, etc., P.

* * * *

CORRECT TONES.

SIR,—Being an amateur photographer, and having deveted nearly all my time te taking portraits, I have been much puzzled by the incapability ef ordinary dry plates to reproduce contrasts in celour with any accuracy. I know that this difficulty is in a great measure avoided by the use of Isochromatic plates, but these are troubleseme for a beginner to work. My failures are most often in the cheice of a suitable background, as I generally select one either so light as to almost match the face, or so dark that the hair fades into it. It seems te me that by the use of a red glass this difficulty would be almost if not entirely obviated, fer by leeking through a red glass one sees yellew and red becoming virtually the same celour, and both fading away into black. Of ceurse, any piece of glass would do; what I use is a pair of cheap pince-nez, with plain lenses, coated with Thomas's Liquid Ruby.

I am aware that an idea very similar to mine was suggested by Mr. Valentine Blanchard in the "British Journal of Photography Almanac" fer 1892, but the blue glass prepesed by him only reduces everything to monetint, whilst I think that my red pince-nez give me the relative values of the colours more as they actually appear in the resulting photegraph.

To these who are far advanced in our art, no such aid is necessary, but for a beginner I believe my plan is of some practical use.—Yours truly, C. E. DARROCH.

Reviews.

The Photographer's Companion. Being a Collection of Hints, Expedients, and Formulæ. By Edward Dunmore. Published by H. Greenwood and Co., 2, York Street, Covent Garden, W.C. Price 1s.

The author in his introductory remarks states his idea was not "to make it a complete book of instructions, or a history of the progress and practice of the art, but rather a supplementary reference book," and it certainly will be found exceedingly useful in this respect. Mr. Dunmere is well known as an experienced craftsman, and what he has to say bears the imprint of practice. The arrangement of the work is semewhat on the lines of the advances made in photography. First we have instructions for cleaning and copying daguerreotypes, then the wet collodion process, its suitability for photo-mechanical work, etc., then the collodio-bromide process. For the clear instructions on these processes alone, the work is worth having, and the succeeding portions treating of the now universal dry plates, copying, portraiture, printing, etc., add to the value of the work as a handy reference book.

Photography Annual. Published by Iliffe and Son, 3, St. Bride Street, E.C. Price 2s. 6d. in paper, or 3s. 6d. in cloth.

This annual is bulkier, if possible, than last year, and now forms a rather unwieldy volume. The contents are very much on the lines of the previous issue. Mr. Bothamley contributes a summary of phetographic chemistry, Mr. Albert Taylor one on astronomical photography, Mr. Whipple on meteorology, Chapman Jones on optics, and Mr. T. Bolas on photo-mechanical printing. Besides these summaries are articles by various writers, and a very large section devoted to apparatus, compiled by W. D. Welford. The work is illustrated with several collotypes and process blocks, and is well printed and got up.

Apparatus.

WATKINS' EXPOSURE METER.

THIS little instrument has become part and parcel of many an amateur's outfit, and Messrs. R. Field and Co., of 142, Suffolk Street, Birmingham, have sent us one of the same fitted with the extra enlarging ring.

The instrument is almost too well known to need any description, but it is a brass tube with revolving rings which are marked with various letters, P, S, D, A. At one end of the tube a cap, which is removed and will then be found to hang by a chain which allows the same to swing, forming a pendulum beating half seconds. At the other end is a small, light-tight case with a standard tint covered by glass and a roll of specially sensitised paper. The cap is removed and set swinging, and the sensitive paper exposed "*to face the source of the light which falls upon the subject, not to face the subject.*" This is a point where many fail; the paper is either exposed towards the subject or else carelessly in the operater's own shadow, not in the full light. If there is a heavy shadow in which detail is required, then the paper sheuld be exposed in shadow, but where there is an insignificant shadow this may be neglected. The number of seconds taken for the paper to darken to the standard tint is the actinemeter or A number. In testing the light the depth of tint is the impertant point. The paper darkens rapidly in light; up to a certain point it is lighter than the standard tint, after this peint it is darker! The peint when it is neither lighter nor darker is that te be timed. There has always been some question abeut this, and the best plan we have found is to hold the actinometer abeut two feet from the eye, when the tint is readily matched, at this distance the precise point when the paper matches the tint being readily determined. Having found out the A number, the ring marked P is set to the number corresponding te the speed of the plates, and in the little book of instructions issued by the makers is a table of P numbers which have been actually determined by Mr. Alfred Watkins frem camera tests. The next peinter marked S is set to the subject number, the only case where individual judgment comes in using this meter; then the D or diaphragm pointer is set to the proper step aperture, and the A or actinometer number is then fixed, when the outside pointer E marks the correct exposure.

This instrument may be used for determining the speed at which to work shutters, or what stop to use with a given speed of shutter, for copying, enlarging, and lantern slide making, for which purpese a special form of instrument with an extra ring is provided, and also fer contact printing by daylight and classifying negatives.

We have had one of these meters in use for some time, indeed it accompanied us on our Easter trip, and we have given it a very severe trial on all sorts of subjects and in all kinds of lights, and have found it a very valuable and reliable guide to that always difficult subject, a correct exposure.

A NOVELTY IN COLOURS.

Mr. Conrad Schulz, of Room 29, 82, Bishopsgate Street, E.C., has submitted to us seme samples of photographs on silk, most artistically coloured. The process is extremely simple, and the materials by no means costly, and may be used by any worker, even those ignorant of the art of painting or colouring. The results obtained are so artistic and natural that we prophesy a very hearty support for this novelty, which has been very well received on the Continent.

Catalogues.

WM. HUME, 1, Lothian Street, Edinburgh. Illustrated Price List of Photographic Apparatus.

A well compiled and illustrated pamphlet of all photographic and lantern requisites, an especial feature being, of course, Mr Hume's well-known Cantilever enlarging apparatus.

ARCHER AND SONS, 43 to 49, Lord Street, Liverpool.

A well arranged price list of 70 odd pages, containing all the photographic specialities made by this firm or for which they are agents. One of the salient features are the sets this firm are now offering, and which strike us as being well worth attention. The "Liver" camera too is another high-class novelty they are introducing. A special and separate catalogue is devoted to lanterns and lantern appliances, one branch of the business Messrs. Archer have deservedly won their name in.

A PHOTOGRAPH, AND HOW TO TAKE IT. By "One who Knows." Published by E. G. Wood, 74, Cheapside, E.C.

This is rather more than a mere price list, as nearly half the book is taken up by concise and clear explanations of its title. We need hardly add that the price list forms a very useful adjunct to this literary part.

Elementary Photography.

By JOHN A. HODGES.

CHAPTER XXIV.

SOME ELEMENTARY OBSERVATIONS UPON THE ARTISTIC TREATMENT OF THE SUBJECT.

The Aim of the Writer—The Advantages of an Artistic Training—The Necessity for Study—Books to be Read—Some Leading Ideas—The Principal Object—Adjustment of Focus—How to Proceed—The Proper Use of Stops—Groups and Figure Subjects—The Pyramid—The Position of the Principal Object—Photographing Streets—Repetition of Lines—Balance—Light and Shade—The Shortcomings of Photography—Choice of Subject—Simplicity—Subjects to Avoid—Motive—The Position of the Horizon.

ANYTHING in the nature of a treatise upon art would obviously be out of place in an elementary text-book, but photography and art are so closely united that to entirely abstain from referring to the subject would certainly be wrong.

I would say, at the outset, that the reader who takes up photography, possessing some prior knowledge, however slight, of composition, balance, light and shade, will find even a superficial knowledge of art principles of the greatest possible assistance in attempting to secure pictures by photographic agency.

It may, unfortunately, be said with truth of the majority of photographers that they care little for, and pay small heed to, artistic considerations in the pursuit of their hobby. A great many people, having mastered all technical details, go on year after year producing photographs good from a technical point of view, but entirely lacking in pictorial merit. This, however, would not be the case if some slight attention were paid to the elementary principles which govern composition. It is, of course, infinitely easier to acquire a knowledge of photography than to learn to be an artist, but there is no reason why a small amount of study and training should not make the reader a little of each.

It must not, however, be inferred from the foregoing observations that the mere knowledge of certain so-called "rules of art" will enable the reader to straightway go and produce good pictures. The two best books upon this subject, *which a photographer can refer to*, have been written by Mr. H. P. Robinson, and are called "Picture-Making," and "Pictorial Effect in Photography." I would strongly advise the reader to obtain copies of these, and "read, mark, learn, and inwardly digest" their contents.

Photographic views which are of an essentially topographical character may very often, by a little careful attention to the selection of the point of view, be considerably improved, but with such subjects I am not for the moment dealing.

It should always be remembered that every successful picture possesses some leading idea, some principal object of interest, all the rest being merely accessory or subordinate. The photographer, therefore, should always endeavour to give emphasis to the principal object by focussing it carefully and making it the sharpest portion of his picture, and by careful adjustment of the focus it is possible to gain an effect of atmosphere and distance. In order to produce this effect the largest stops permissible should be used. As I have said, the principal object should be focussed sharply with the open aperture of the lens. If this object be in the immediate foreground, as it generally will be, the middle distance and distance will possibly be very indistinct and fuzzy; smaller stops should then be inserted until the middle distance is fairly but not microscopically sharp, the distance may then be left to itself. *F*/16 is a most useful aperture, and, if possible, a smaller stop should not be used, except it be for architectural subjects or special purposes.

In taking a group, or in composing a picture in which several figures form a prominent part, anything approaching symmetry, like a file of soldiers standing at "attention" (fig. 1), should be studiously avoided, and the figures grouped in a pyramidal form, as in fig. 2.

One of the rules of art to which I have referred is that the lines of the composition should be so arranged as to form a pyramid or series of pyramids. A striking example of this is to be found in Wilkie's "Blind Fiddler."

The principal object should never occupy a central position in the picture, for the centre in is reality its weakest point. For instance, in photographing a landscape with buildings, the latter should not be in the centre, but rather to the right or to the left; figs. 3 and 4 are illustrations of this. In the same way in photographing a street scene, the camera should never be placed in the middle of the road, but on one side, either to the right or left, so that the vanishing point may not occur in the centre of the picture. Try and avoid a repetition of lines as in fig. 5, either perpendicular or horizontal, because monotony is introduced, sloping lines opposed to each other are far more pleasing (fig. 6). By following this rule the effect known as "balance" will be obtained, and the picture rendered in a pleasing and effective manner.

Now, a few words on a most important subject, and one over which the photographer has some slight control; I refer to "light and shade." In dealing with form, the photographer is somewhat heavily handicapped, but, by making the exposure at the right time of day, and when the subject is most suitably lighted, he will be able to secure just the effect of light and shade desired. One reason why such a large number of photographs are so unpleasing, although the composition may be good, is due to the spotty and scattered nature of the lighting. This is particularly noticeable in landscape subjects where there is much foliage. The light is reflected from the small leaves in a distracting manner, which detracts greatly from the general effect. The light and shade in a photograph should be massed as much as possible, so as to secure breadth; very fine effects are sometimes obtained by bringing the highest light into strong contrast with the deepest shadow. But here it is necessary to remind the photographer that he cannot reproduce on a photographic plate the exact gradation of light and shade existing in nature, for, as I have endeavoured to explain in the chapter upon isochromatic photography, ordinary plates are less sensitive to some colours than to others, particularly to yellow and green, and it is for this reason that isochromatic plates are so markedly superior for landscape work. A great many landscapes excite our admiration solely on account of the beauty of their colouring, and this fact the photographer should always bear in mind. The plan is adopted by some, and it is one to be commended, of looking at the selected view through a piece of blue glass, or a pair of blue spectacles, it will then be seen whether the effect is due to local colouring only, or to a fine disposition of light and shade.

In regard to choice of subject a volume might be written, but here I must content myself with a few words. The beginner should confine himself to landscape pure and simple until he has made himself thoroughly acquainted with the use of his tools. Having done so he may then try the introduction of animals or figures into the composition, but only, of course, allowing them to occupy a subordinate or accessory part in the picture. Figure, *genre*, and group studies are to the photographer the most difficult of all, and the beginner, who has received no art training, would do

well not to attempt them until he has acquired considerable proficiency in dealing with simpler subjects.

Simplicity, both in the subject and its treatment, is really the key-note to successful picture-making with the camera and lens. Extensive landscapes, seen perhaps from well-known view points are seldom well rendered in a photograph. A little bit of leafy lane, with a thatched cottage peeping through the trees, will probably make a far more pleasing photograph than a mountain range, or a wide tract of country. Remember the limitations of photography, and beware of attempting too much. Let every picture have a motive, and, as it were, tell its own tale; avoid meaningless composition—a collection of accessories without aim or object. As an example of this, contrast fig. 7 with fig. 8, and note how easily an ordinary and even uninteresting scene may, by very simple treatment, be imbued with the picturesque.

I will conclude these brief comments upon what is really a very wide subject by a brief reference to a most important matter, viz., the position of the horizon line. It should rarely, if ever, be absolutely central, cutting the plate, as it were, into two equal portions. Whether it be high or low must, to some extent, depend upon the nature of the subject, and the effect sought for. When photographing in a flat country, if it be desired to give the impression of distance, the horizon should be kept low, and should not be higher than one-third up the plate. If much foreground be included in pictures of this class, the feeling of distance is to some extent lost, owing to the fact that the lens, as a rule, includes too wide an angle of view, giving undue prominence to near objects, and consequently dwarfing the distance. A low horizon is generally easier to manage that a high one, though there are occasions when the high horizon is very effective. This is often the case in marine work, and particularly with upright pictures, but it will generally be safe to place the horizon line about one-third from the base of the picture.

I have now, I trust, written sufficiently upon this topic to induce the reader to seek further knowledge from such books as those from the pen of Mr. Robinson to which I have already referred.

[Owing to delay in the preparation of the blocks, the illustrations which should accompany the text are unavoidably held over until the publication of "Elementary Photography" in book form.—Ed: Am: Phot:]

Absorption and the Photography of Colours. By M. Labatut. (*Bull. Soc. Franc. Photo.* [2], 8, 58.) According to the author, when an ordinary sensitive plate is treated by the Lippmann process the impression is obtained very slowly, but if the plate be dyed with a colouring matter having well defined absorption lines, after developing and drying it will be found to show coloured bands. That the photographic impression is produced by the absorbed rays is shown by the fact that if a material dyed more strongly with the same colouring matter be held in the path of light, the photographic impression will not be produced. Hence the author says that if in Lippmann's experiment it be proposed to obtain an impression of given radiations, it will be sufficient to choose a sensitive plate coloured to absorb this radiation, and no coloured screen will be necessary. A Victoria green absorbs the red orange, and a plate dyed with this green and treated as in Lippmann's process showed this colour on its external face. In the same way cyanine absorbs the yellow orange and the green, and in a plate dyed with it these same radiations are seen. But when the plates are examined from the back the colours obtained appear to be complementary to those shown on the face. The author concludes that in consequence of the concordance between absorption and the photographic reduction, it is not necessary to use the spectroscope in order to obtain on plates the colours of thin layers. If a beam of white light falls on a coloured plate in contact with a mercury mirror there is interference. The absorbed radiations only impress themselves on the sensitised material and the others are transmitted without effect. The result of the impression is a colour which is the synthesis of those that would have been obtained by the use of the spectroscope.

The Lantern, and how to Use it.

By C. Goodwin Norton.

(*Continued from p.* 8.)

Chapter XIII.

When preparing the lantern and apparatus for an exhibition, it is a good plan to make a list of everything that is likely to be required, and carefully check each article as it is packed, as the absence of one may seriously delay the exhibition, or even prevent altogether its being given.

Numberless mishaps have occurred from operators leaving something behind, or taking one article in place of another. The articles likely to be left behind and most inconvenient to dispense with are limes, gas-keys, regulator, carrier, reading-lamp, or jet.

With those hiring lantern apparatus care should be taken to see that the proper gas is supplied, and the regulator and keys fit, that the lenses are of suitable focus and have proper connectors to place them at the correct distance from the condenser.

Supposing nothing has been left behind, the first thing is to determine the position of the sheet, and fix it in such a position that the bottom will clear the people's heads, and also that the whole of the picture may be seen by the audience in comfort. If the room is very long and narrow, and long-focus lenses are available, it is a good plan to place the lantern at the side of the room against the wall; it will then be out of everybody's way; and to hang the screen obliquely, so that it will be at right angles to the centre of the rays of light. The screen may appear a little out of position to those sitting in front, but this is not noticeable after the gas in the hall has been lowered.

Most amateurs endeavour to show as large a picture as possible; this is a great mistake. To see a 20 ft. picture in comfort, a person must be at least 20 ft. from it, consequently those in the front are often in the worst position, while those at the back, who generally pay the least, see best. The picture should be as small as possible, provided it can be seen distinctly from the back of the hall.

Having fixed the screen or decided upon its position, the supply of house-gas, if the blow-through jet is used, is generally the next difficulty, and very often the position of the lantern depends upon this. When using mixed gases from cylinders, the lantern can be placed almost anywhere, but with bags it is best to show from the ground-floor, as few galleries have a safe place on which to fix the pressure boards.

The lantern should be supported at such a height that it can be manipulated in comfort. The cylinders should be laid on the floor unless there is something substantial to which they can be tied in an upright position.

The slides must be carefully arranged by the lecturer and operator, and placed in a convenient position, so that they can be reached without much stooping or turning round.

The lantern being on its stand, connect it to the gas supply, turn on the hydrogen and light up, adjust the bypasses, turn on the oxygen, and try the bypasses again; if the gas splutters, cracks, or goes out, look for a leak near the chamber, which must be immediately stopped by sewing up the collar holding the nipple, or the jets will be destroyed, and perhaps the lantern set on fire. The lights sometimes pop out because the bypass flame is not high enough, or because the oxygen bypass is on in the case of the mixed jet.

Open all the front shutters and remove the diaphragm entirely from the lantern, put a focussing slide in the top

lantern and focus as near as the light will allow, remove the slide, and centre the light, turn it down and proceed the same with the middle and bottom ones; next get the two or three discs coincident by the registering templates, and adjust the diaphragm if it is adjustable. All these adjustments occupy an experienced operator about five minutes, and require about half a foot of gas; the amateur may expect to take about ten minutes to do the same work and consume gas in proportion. When using a lantern with adjustable stages, see that the slides are in the centre of the condenser, or the corners may be cut off. When once the lantern is made ready, the adjustments should not be touched if it is possible to avoid doing so; it is better for one or two pictures to be out of the centre, or even out of focus, than to run the risk of spoiling the registration by constantly fidgetting with the screws. Unless the operator is fortunate enough to possess very good eyesight, he will find it convenient to use an opera glass. When using mixed gasses some authorities recommend using house-gas to warm the limes and condensers with a view to economising the hydrogen, and then just before the exhibition begins connect the jets to the bag or cylinder; this is not a safe practice, as there is the liability of getting the oxygen in the gas mains, which is inconvenient even if nothing further happens than the extinguishing of the gas jets in the hall.

When the lantern is quite ready the jets can be turned out by the taps on the supply tubes, or if there is a longer time than say ten minutes before the exhibition begins, the gas had better be turned off at the bag or bottle as well.

To begin, a curtain slide should be placed in the bottom lantern, or centre one in the case of a triple, and the light turned up, the front shutter being closed. "Good evening," or similar one, is placed in the top lantern; the diaphragm should be raised to clear the lantern having the curtain in it. Flash on the curtain by suddenly opening the front shutter, taking care not to jar the lantern, and turn on the top jet. At the proper signal lower the diaphragm, which raises, or appears to raise, the curtain. When a triple is used, the third slide is placed in the bottom lantern and the dissolver used to change the picture, when the diaphragm can be entirely removed; but with a biunial the third slide must be placed in the bottom lantern and the diaphragm raised; the top lantern is then turned off, the diaphragm removed, and dissolving proceeded with.

Some system of signalling, the simpler the better, should be arranged between the lecturer and operator; the following will generally suffice:—Coloured light, "Next picture;" coloured light shown two or three times, "Bring on effect;" coloured light quickly flashed many times in succession, "Picture out of focus;" the bell signals would be the same, but should only be used in the case of the operator going to sleep, and even then it should be muffled. Nothing is more annoying to a conscientious operator than to be spoken directly to by the lecturer, or for the latter to continually find the picture changed at the wrong time, or for it to be out of focus. It ought to be very simple for the lecturer to convey his wishes by introducing a little gag; and as few operators are infallible, any mistake, such as winding the snow up instead of down, should be immediately covered by the lecturer making some remark upon the erratic course of a snowstorm during an east wind in January, or something similar; as a rule an apology only makes matters worse.

A single mistake, provided it is rectified at once and not repeated, will always be forgiven by a general audience. The shutter of the lantern should be closed after the light has been turned down and before the slide is removed, or the afterglow on the lime will fog the picture. This applies especially to blow-through jets. Turning the lime answers the same purpose, but this cannot always be done if several pictures are shown in rapid succession.

It is always advisable to have an interval of five or ten minutes, to give the lecturer a rest and the operator a chance to clear up his slides and see to his limes, gas supply, etc.

(To be continued.)

THE PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN.

THE technical meeting was held on the 28th ult., Mr. W. Bedford in the chair. The Hon. Sec. passed round prints and negatives taken with the new "Sandell" plate of Messrs. Thomas and Co. Some of the negatives had one or more of the films partially removed to demonstrate the multiple film. He remarked that Messrs. Thomas claimed that owing to the thickness of the film and its multiple character very great latitude in exposure was permitted. Mr. Mackie read an extract from a pamphlet respecting the new plate, and the Hon. Sec. said he had made some sensitometer tests with the plates, which gave No. 25, his highest square. He had also given three or four times the ordinary exposure, and still found gradation from the first number. There was plenty of light-absorbing power in the films for a far denser image than would ever be needed. Mr. Cadett said the plates certainly had good qualities and could be over-exposed to a much greater degree than ordinary plates without harm. An ordinary heavily-coated plate, however, would yield gradation far beyond anything which an ordinary printing process would show. The Hon. Sec. thought if a negative with a large range of gradation were developed thinly enough, the whole range might be shown in the print. Mr. Cadett said only to a certain extent. In a negative thin all over the gradations near the shadows would have no printing value, so that what was put on at one end was taken off at the other. In reply to a question from the Chairman, the Hon. Sec. said a "Sandell" plate might show all the gradations on a sensitometer screen, but the difference between one square and the next would be proportionately smaller. Mr. Debenham remarked that as far as his experiments went, when a plate had been exposed to such an extent that with an ordinary developer it would reverse he had not been able by any variation in the developer to prevent that reversal. Mr. Clifton said he had made the same observation, however much the developer was restrained. The reversal showed as soon as development was commenced. Mr. Debenham said there had been a good deal of experiments years ago in mixing emulsions of quite different rapidities. He did not know whether any definite result was arrived at as to whether greater range of gradation was thus obtained. Mr. J. D. England said with mixed emulsions there was a loss of gradation. Mr. Cadett remarked that the supposed result of mixing a slow emulsion with a rapid one was a mean of the two, but actually the result favoured the slow emulsion rather than the quick one, and you got the bad qualities of both. Mr. Mackie pointed out that in an article which appeared about a year ago, Prof. Burton said he had found great advantage to arise from mixing emulsions. The Chairman thought as reversal could be encouraged by modification of development; it might also be retarded, although the method was not yet discovered. Mr. Mackie said Col. Waterhouse's experiments certainly proved that a plate only sufficiently exposed to produce a negative could be made to produce a reversed image. Mr. Bolas thought the use of bichromate did not so much encourage reversal as tend to make it a little more definite than it would otherwise have been. By the use of bichromate it seemed to him very easy to get complete reversals, although a longer exposure was necessary than without the bichromate. As far as he could judge, negatives produced on bichromated gelatine plates could be made identical with the originals. The Hon. Sec. remarked that Bennett had found complete reversal by an exposure of about ten times that which gave the maximum deposit, using a pure gelatino-bromide emulsion. Iodide in an emulsion appeared to very greatly retard reversal. The meeting then terminated.

Belfast Y.M.C.A.—On the 4th inst. the usual monthly meeting was held, Mr. W. Pollock presiding. The prints in the Monthly Competition were on view, the awards having been made as follows: First prize. J. McCleery, for an artistic study of a group of sheep standing in a country lane, the tone of print being a rich brown colour; second place was secured by J. A. Pollock, "On the River Bank," a pretty scene, several cattle well grouped, giving great effect to the picture; third place to W. H. M'Clcery, a view at "Red Bay," near Cushendall. Samples of the new Eastman gelatino-chloride paper were distributed; finished prints on same were shown by the Secretary and passed round for inspection, the tones ranging from sepia to a rich brown.

W. WATSON & SONS, 313, HIGH HOLBORN, LONDON,

HAVE RECENTLY BEEN AWARDED

At the **AMSTERDAM** PHOTO EXHIBITION, 1891—THE **MEDAL** OF THE SOCIETY

At the **GLASGOW** PHOTO EXHIBITION, 1891—THE **MEDAL** OF THE SOCIETY.

At the **ANTWERP** INTERNATIONAL MICROSCOPIC EXHIBITION, 1891—TWO DIPLOMAS OF **HONOUR** (Degree above Gold Medals).

At **BUDAPESTH**—THE **GOLD MEDAL** OF THE PHOTOGRAPHIC SOCIETY.

Making 27 awards for the excellence of their Instruments, including Paris Universal Exhibition, 1889 (2 Gold), London, Liverpool Melbourne, etc.

W. WATSON & SONS believe they are the largest Manufacturers of High-class Photographic Instruments in Europe, and intending Purchasers can be allowed at any time to inspect their Steam Factories, which are close to their Warehouse, and judge for themselves as to the quality of Material used and the care bestowed on the Manufacture of their Goods, which W. & S. are confident is elsewhere unequalled. *Testimonials as to the efficiency of their Instruments are received almost daily.*

Watson's "Acme" Camera.
Unsurpassed for Outdoor use.

Watson's "Premier" Cameras.
For Professional use, *Indoor or Out.*

Watson's Studio Cameras, Tripods, Enlarging Lanterns, etc.

Sensitized Albumenized Paper.
The Best White or Rose. Per quire, 13s.; half quire, 6s. 6d.; quarter quire, 3s. 6d. Single sheet, 10d., post free.

Watson's "Detective" Hand Camera.

Watson's Rapid Rectilinear Lenses.

Watson's Wide Angle and Single Landscape Lenses.

All Cameras and Lenses may now, at an advanced cost, have the Metal parts made in Aluminium.

Sensitized Matt-Surface Paper.
Exceedingly popular. Yields most artistic results. Per quire, 13s half quire, 6s. 6d.; quarter quire, 3s. 6d. Single sheet, 10d., post free

AN ILLUSTRATED CATALOGUE OF CAMERAS, LENSES, AND APPARATUS SENT FREE TO ANY ADDRESS ON APPLICATION. Established 1837.

— AND AT MELBOURNE, AUSTRALIA—251, SWANSTON STREET. —

STEAM FACTORIES: 9, 10, 11, 16, and 17, FULWOOD'S RENTS, HOLBORN.

Wratten & Wainwright's
CELEBRATED
"LONDON" PLATES,

"ORDINARY" (15°). For Landscapes, Copying, and Transparencies.

"INSTANTANEOUS" (19°). For Studio and General Work.

"DROP-SHUTTER SPECIAL (24°). For Dull Weather and Hand Cameras. The most rapid Plate made.

Have been manufactured continuously for fifteen years, and have never yet been approached in quality. They are recognised by the most competent authorities as the standard by which all other Plates are judged. These Plates are indispensable for the production of Exhibition Pictures. More High Class Medals have been secured by results on the "London" Plates than all others combined.

Wratten & Wainwright's
SENSITIZED PAPER

HAS THE LARGEST SALE AND HIGHEST REPUTATION, KEEPS WELL, TONES EASILY, AND **DOES NOT BLISTER.**

Post Free—per Quire, 13/6; Half-quire, 7/-; Quarter-quire, 4/-; 3 Sheets, 2/3; Sample Sheet 10d.
Cut Sizes, 1/- per Quire extra.

APPARATUS, CHEMICALS, ETC., OF THE BEST QUALITY ONLY, AT LOWEST MARKET PRICES.
Catalogues and Estimates Free.

WRATTEN & WAINWRIGHT, 38, Great Queen Street, Long Acre, London, W.C.

TELEPHONE No. 2776. TELEGRAPHIC ADDRESS: "WRATTEN, LONDON."

E. G. WOOD, Optician,

74, CHEAPSIDE, & 416, STRAND, LONDON.

WOOD'S BEST QUALITY CAMERA.—Double Extension, Turntable, 4-fold Stand, and Three Double Backs. Best Workmanship throughout, ½-plate, £8 8s.

WOOD'S ENGLISH LENSES for Landscapes, Portraits, or Architecture. Carefully Corrected, Centred, and Mounted.

	Rapid Rectilinear.				Wide Angle.			
	Focus.	Water. Diaph.		Iris Diaph.	Focus.			
4¼ by 3¼	5 in.	£2 15 0		£3 5 0	3 in.		£3 0 0	
6½ „ 4¼	7 in.	3 10 0		4 4 0	4 in.		4 0 0	
8½ „ 6½	11 in.	5 5 0		6 6 0	5 in.		5 0 0	

COMPLETE SETS OF APPARATUS, including Best Camera, English Rapid Rectilinear Lens, 4-fold Stand, Leather Case, and Materials, etc., all of the best quality.

¼-plate, £14 10 0 ½-plate, £18 10 0 1/1-plate, £28 10 0

"A PHOTOGRAPH, AND HOW TO TAKE IT," WITH CATALOGUE GRATIS. POST FREE, ONE STAMP.

ELLIOTT & SON'S

'TYPICALLY PERFECT!'

ORDINARY

AND

EXTRA RAPID

'BARNET'

PLATES.

OF ALL LEADING DEALERS, OR DIRECT FROM THE WORKS,

BARNET, HERTS.

W. WRAY, LENSES.

MANUFACTURER OF PHOTOGRAPHIC

PRICE LIST FREE.

Illustrated Catalogue of Telescopes, Microscopes, etc., for stamp.

NORTH HILL, HIGHGATE, LONDON, N.



PYRO "DEVELOPOIDS."

A 1s. bottle may be carried in the waistcoat pocket, and will develop six dozen plates. Invaluable when travelling and at all times. Sold everywhere.

Sole Maker—

T. H. POWELL,

116, DENMARK HILL, LONDON, S.E.

Sole Agents—MARION & CO., 22 & 23, Soho Sq., London, W.

Powell's "SHUTTER" Developer, for all rapid exposures 1s. 6d.

"The Amateur Photographer."

Binding Cases	1/6
Reading „ —	2/
Volumes	7/6

Post free of the Publishers.

ARE YOU AWARE OF THIS?

ADAMS & CO. are the LARGEST General Photo Dealers in Great Britain.
It would PAY YOU in many ways to obtain your requirements from us.
Send for our 1892–93 ANNUAL, just out, 384 pp., 500 Illustrations, 6d., post free 1s.

ADAMS & CO. have £15,000 worth of Stock to select from.
It would PAY YOU in many ways to obtain your requirements from us.
Send for our 1892–93 ANNUAL, just out, 384 pp., 500 Illustrations, 6d., post free 1s.

ADAMS & CO. are the ONLY General Dealers who are ALSO Manufacturers.
It would PAY YOU in many ways to obtain your requirements from us.
Send for our 1892–93 ANNUAL, just out, 384 pp., 500 Illustrations, 6d., post free 1s.

ADAMS & CO., Wholesale, Export, and Retail of EVERYTHING Photographic.
It would PAY YOU in many ways to obtain your requirements from us.
Send for our 1892–93 ANNUAL, just out, 384 pp., 500 Illustrations, 6d., post free 1s.

ADAMS & CO., Inventors, Patentees, and Manufacturers of numberless Specialities.
It would PAY YOU in many ways to obtain your requirements from us.
Send for our 1892–93 ANNUAL, just out, 384 pp., 500 Illustrations, 6d., post free 1s.

ADAMS & CO. have HANDSOME and COMMODIOUS Premises at 26, Charing Cross Road, W.C.
It would PAY YOU in many ways to obtain your requirements from us.
Send for our 1892–93 ANNUAL, just out, 384 pp., 500 Illustrations, 6d., post free 1s.

ADAMS & CO. have extensive premises, consisting of 5 floors, at 81, Aldersgate Street, E.C.
It would PAY YOU in many ways to obtain your requirements from us.
Send for our 1892–93 ANNUAL, just out, 384 pp., 500 Illustrations, 6d., post free 1s.

ADAMS & CO. have new and extensive FACTORIES at Aldersgate Buildings, E.C.
It would PAY YOU in many ways to obtain your requirements from us.
Send for our 1892–93 ANNUAL, just out, 384 pp., 500 Illustrations, 6d., post free 1s.

ADAMS & CO. allow a Cash Discount off nearly ALL goods.
It would PAY YOU in many ways to obtain your requirements from us.
Send for our 1892–93 ANNUAL, just out, 384 pp., 500 Illustrations, 6d., post free 1s.

ADAMS & CO. are cheaper than the Stores in MOST goods.
It would PAY YOU in many ways to obtain your requirements from us.
Send for our 1892–93 ANNUAL, just out, 384 pp., 500 Illustrations, 6d., post free 1s.

ADAMS & CO. can supply you with EVERYTHING you want.
It would PAY YOU in many ways to obtain your requirements from us.
Send for our 1892–93 ANNUAL, just out, 384 pp., 500 Illustrations, 6d., post free 1s.

ADAMS & CO. send goods off SAME DAY as ordered by post.
It would PAY YOU in many ways to obtain your requirements from us.
Send for our 1892–93 ANNUAL, just out, 384 pp., 500 Illustrations, 6d., post free 1s.

ADAMS & CO. are Sole Proprietors and Manufacturers of the following:—
The "ADAMS," "IDEAL," "HAT," & "OTTO" Hand Cameras; the new "ADAMS" Changing Box; also "ADJUSTABLE" Shutter, and over 100 OTHER SPECIALITIES.

ADAMS & Co 81, ALDERSGATE St. E.C. (FACING THE STATION) & AT 26, CHARING CROSS Rd. W.C (ADJOINING THE CAMERA CLUB) (CHARING CROSS END) **LONDON**

THE ACTINOGRAPH

Price 10s. 6d.

PAMPHLET FREE ON APPLICATION.

Will shortly be ready for OTHER LATITUDES as follows:—

0° Equator.	52° 30′ North (Now on Sale) for Great Britain.
10° North.	57° 30′ „
20° „	62° 30 „
30° „	10° South.
40° „	20° „
47° 30′ „	30° „
	40° „
	47° 30′

UNSOLICITED TESTIMONIAL.

"Haileybury College, Hertford,

"Messrs. MARION & Co., *May 24th*, 1892.

"I wish to take this opportunity of saying how much I have benefited by the Actinograph. I have had a great deal of copying prints, etc., to do in a room here, and after one or two experiments to decide on the special factor necessary under the conditions, I settled down to be guided entirely by the Actinograph as to exposure. Out of the 300 or 400 negatives I have thus taken, I have had so few failures that I attribute them entirely to my carelessness. Yet I have followed the Actinograph in all conditions of weather, and at all times of the day, from January to May, with plates of different speeds, and with varying stops. I have had but little experience out of doors with it. What I have had has been as satisfactory as indoors.

"I am, yours faithfully, Rev. W. D. FENNING, M.A."

MARION & CO.,

22 & 23, SOHO SQUARE, LONDON, W.

A Holiday in Norway.

PHOTOGRAPHY AMONG THE FJORDS.

(*Continued from page* 28.)

IV.—MUNDAL AND BALHOLM.

A PEEP AT TWO GLACIERS.

THE morning found us lying off the hamlet of Mundal, in the Fjærlands Fjord, the Boiums Glacier gleaming white in the sun over the sloping shoulder of a great hill away to the northward. We were very quickly on shore, and perhaps more photographs were taken here than at any other place where we touched. Without moving more than a score of yards it was possible to get some half dozen magnificent views of the fjord, which here widened into a placid lake, in whose still depths the ship lay mirrored, and of the ring of mountains lying around the picturesque little village; while the verandahs of the hotel afforded a charming background for those who desired to take groups of their friends. So attractive was the scene, that many of the passengers lingered awhile before starting for the glaciers. It was a lazy day. Mundal lies in a central valley, whence, as the spokes of a wheel, mountain ridges radiate in all directions. The heat was intense down in the valley, and the springing verdure everywhere showed that we had lighted on a most fertile spot. Wandering off along the valley that leads to the Boiums *brae* or glacier, we found the broken ground between us and the hills simply carpeted with violas and dainty oak and parsley ferns, and many a flower that England does not know. The snow-capped hills on the left, the still waters of the fjord rippling to our feet on the right, the cool vision of the glacier sweep some miles ahead, and many a babbling fall meandering down the mountain sides and through the level rocks, these were the accompaniments of the first part of the walk. Then came the parting of the ways, one valley leading off to the Suphelle, and the other to the Boiums glacier. Here broad meadows spread an emerald floor between the encircling mountain walls, on whose white summits lay the azure roof unflecked by any cloud. Hence the Boiumsdal proceeds at first through groves of flickering sun and shade, and afterwards between dark cliffs along the side of the foaming, ice cold glacier stream. The *brae* is in sight the whole way, but it is a long and a stiff walk right up to it, yet one is sure of one's reward. From far up the hill, the broad white sheet of snow sweeps down, its lower edge of icy blue, broken into deep fissures and crevasses, which lend a tinge of azure to the fringe of snow above. In one of these fissures, the opening guarded by a flying buttress fashioned out of a curving pillar of ice, a remarkable cave is formed, whose walls are all of blue. Inside this cave an admirable photograph of some of the explorers was secured. The Suphellebrae is reached by a softer valley, the hills enclosing which being robed with grass and silver birches. It descends to within 160 feet of the sea level, and the ridges of gravel deposits that one passes mark the limits reached in years gone by. On the way back, as on the road thither, Norwegian maidens stood outside their scattered homes and offered to the thirsty traveller milk just brought down from the *sæters* above, and glasses of home-brewed Norwegian ale. Back at Mundal again, a group of men busy in building a house attracted our attention. The Norwegians are famous for their manual dexterity at all kinds of woodwork, but still it seemed strange that not a single saw or plane was to be found amongst all the workers—no other tool than the axe. Yet the wooden walls of the house were neatly and strongly dovetailed at the angles, and all the work, so far as could be seen, most skilfully and thoroughly finished.



THE ROAD TO THE BOIUMS GLACIER.

ON THE WAY TO BALHOLM.

The attractions and the excursions of Mundal were not yet nearly exhausted, but some of us had a desire to visit Balholm at the entrance to the Fjærlands Fjord. So about half-past four we secured a boat with two rowers who agreed to take us the sixteen miles down the fjord. That run down to Balholm none who took part in will ever forget. A perfect peace, born of the perfect summer day, breathed on the quiet hills that lay steeped in the sun's warm glow. The tiny rills scarce seemed to move, except to make that music which

> "brings sweet sleep down from the blissful skies."

Not a cloud broke the blue above, and far ahead the shining waters slept, wakened for a moment by the dipping oars as we passed on smoothly gliding keel, then falling into silver sleep again. The sturdy boatmen swung in perfect rhythm as they bent to their task, and sang as they swung fragments of the Balder Saga, and of quaint Norse airs, while we lay at the bottom of the boat, and, like the Lotos-eaters, thought—

> "How sweet it were, hearing the downward stream,
> With half-shut eyes ever to seem
> Falling asleep in a half dream."

Four hours of this, and then passing the mouths of the Vetle and

Svaer Fjords, the promontory on which Tjugum is picturesquely built was rounded, and Balholm lay full in view, one of the loveliest of all the villages on the Sogne Fjord. A legendary interest attaches to it too, for Balholm and Vangsnaes, on the opposite shore, are famous as the scene of Tegner's beautiful "Frithiof Saga," which is shortly outlined in Edna Lyall's book, "The Hardy Norseman." Right before us, as we landed, stood Herr Kvikne's Hotel, the most comfortable and homelike to be found in all Norway. In front of the verandah, which is but a few feet from the water's edge, rose rich clusters of white and purple lilacs, whose breath filled the air with balm; and near at hand was an orchard piled high with masses of snowy and crimson bloom. Behind the hotel Munkeegen and Tjugumtoten lifted their snows to the skies, and before us, across miles of shimmering water, rose another lofty range. Round to the right curved the sloping shore with its fringe of sentinel trees, and behind these white and red houses cosily set in verdant fields at the mountain's foot. From the wooden quay in front of the hotel, a bridge led over to a tiny island, whore excellent baths had just been built, and within a stone's throw of the orchard was a passable tennis ground. These things we saw nowhere else; but Balholm, surrounded as it was by magnificent scenery, had yet a cosy and prosperous air. The houses were larger and better built. The inhabitants all seemed well-to-do, and yet they retained sufficient curiosity to wait up all night to see the great ship that was to call for us in the early morning on its way from Mundal to Gudvangen. Here it was that one of the most remarkable photographic feats of the trip was attempted. In the middle of the village is a mound, marked by a monolith as the grave of King Bele. Just after midnight, for tho ship was late, an enthusiast of the camera, and a Scotchman to boot, conceived the idea of photographing the mound and the group of Norse lads who stood on the top of it. An exposure of a minute and a half was given, and as soon as he had removed the cap, he actually came round and joined those of us who were standing in the foreground. At the end of nearly a minute, the natives grew tired of the silence and coolly walked off in a body. Still our amateur calmly waited, and at last walked up to the camera and replaced the cap, dismissing all irregularities with an off-hand, "Eh, mon! it's a' richt!" A day or two afterwards, however, he confessed that the plate was "a failure so far as a picture was concerned."

SUNRISE ON THE MOUNTAINS.

Still the steamer did not come. But waiting in the warm, still air of that balmy night, so light that it seemed only a dull afternoon, was easy; and presently, as we waited, a breeze of morning stirred amongst tho leaves, and the hush of silence was broken by the carol of a sweet-voiced bird. What the difference was no one could tell, but there was a change, and night had passed into morning. The clear, cold light of dawn stole over the fjord, coming from the east, and struck on a mountain peak 4,000 feet high; and soon, on the milk-white snow that rose from its broad bosom about its rocky head, one little ray of sunlight fell, and lay there like a blush rose newly blown. Then with rosy fingers came the morn and took the rose and flung it all abroad, and bathed the hills in glowing light, and leapt up to the sky and faintly crimsoned the cloudlets thore. All around broke forth the song of the birds;

> "The cuckoo told his name to all the hills;"

the thrush sang loud as if he were in an English garden, and "sang his song twice over,"

> "Lest you should think he never could recapture,
> That first, fine careless rapture."

A brown-sailed boat put slowly out from the harbour and sluggishly moved across the shining fjord, and soon over the wooded shoulders of the hills round Tjugum rose the smoke of the *City of Richmond* coming to pick us up. Seeing this, and obedient to tho warning whistle that shook the morning air, we rowed out to meet her, followed by a small flotilla of Balholmites, bent on seeing all they could of the monster ship.

(To be continued.)



MUNDAL (from the "City of Richmond").

Societies' Meetings.

Eastbourne.—Ordinary meeting on 6th inst., about twenty-five members present, Rev. H. G. Jameson in the chair. The Secretary (E. Burnham) announced that Capt. Brand, the Liberal candidate for the division, had allowed himself to be proposed as an hon. member. Dr. Habgood continued his lecture, commenced in May, descriptive of a tour in Spain and the South of France. The photographs were uniformly good, considering the difficulties under which he laboured. In Paris the worthy doctor was nearly arrested through not having obtained leave of the police to photograph; he was locked up in the Mausoleum at Nimes, and had to clamber over the railings, and in Lisbon he had to keep one eye on the camera and the other on the police. At the conclusion of his lecture Dr. Habgood showed some hand-camera work done at the Zoological Gardens on the occasion of the recent excursion of the Natural History Society to that institution.

Hackney.—The usual meeting was held on the 5th inst., Mr. Walter Barker in the chair. The Chairman on rising was warmly greeted, and, in the course of a homely little speech, hoped the new quarters would be fully appreciated. A question from the box about

whether carbonate of potash would frill more than ammonia was then discussed. Mr. Beckett had never had any frilling with either; possibly the temperature of the water was the cause. Mr. W. Fenton-Jones said soft gelatine used by some makers was sometimes a cause. A question was then asked, "If two lenses of the same focus were selected for use in stereo work would they be suitable, and would there be any difficulty of letting off shutters at same time?" Mr. Dando said there would be no mechanical difficulty, but the lenses ought to be good, and selected by an optician. Mr. Sodean showed card indicating the 100th, 200th, and 300th parts of an inch. Report of excursion was then taken, Mr. Gosling humorously describing it. Mr. Dean showed photograph of fungi 18½ inches across; Mr. Barker work done on Eastman's gelatino-chloride paper, samples of which had been sent. Mr. Dando handed round a piece of the same paper, which he had put in wrong way in frame, and asked if he dissolved the gelatine from other side would it fade? Mr. Beckett said not, if paper had been properly fixed and washed. Mr. Gosling handed in prints on Ilford P.O.P., Ilford Iso. plates. Mr. Hudson showed an arrangement he had made, on the stereoscopic principle, for taking any moving objects. The idea was that focussing could be done on the top, and the exposure made immediately it was obtained sharply. Mr. Dando thought the top would rather draw out of focus. The Chairman showed a diaphragmatic shutter, the shutter opening from and closing to any sized diaphragm. It was said that the principle was wrong, as only 50 per cent. of exposure was obtained. Mr. Hensler had heard it stated that a smaller stop alters focus. The Chairman observed that Dallmeyer advocated focussing with any aperture but the full. Mr. Beckett said faulty lenses would alter in focus. The Chairman handed round a new hand-camera of his own design. The plates dropped on to an india-rubber band, which one member declared was dangerous to the plates, as it would cause a formation of sulphur. Mr. Dando wanted to know whether storing backed plates would cause them to deteriorate, but an opinion was that it did not. Mr. Dando was then unanimously chosen as a delegate to the Convention on behalf of the society. Mr. Wheeler was nominated.

Harlesden and Willesden —A meeting was held on the 5th inst., J. Naylor, Esq., in the chair. The minutes of the last meeting were read and approved. The following gentlemen were elected members:—Messrs. C. F. Mitchell, R. Schofield, and R. J. Houlton. Records of two previous excursions were read by Mr. Naylor and Mr. Woodbury. The decision of a room for holding the Society's meetings was left in the hands of the Council. Mr. Naylor then gave a demonstration of the new cold-bath platinotype process. After a short *resume* of the history and chemical theory of the process, he proceeded to show the superiority of the new process over the older ones. The printing, he explained, required to be carried on until the image was more visible than with the old process. The members then adjourned to his palatial dark-room, when a practical demonstration of the development took place. The members were much interested in the manner of development, and the methods shown of saving an over-exposed print, or by the addition of glycerine to the developer, over-developing certain portions stronger, in order to gain greater contrasts when required. Referring to the methods of obtaining sepia tones with the aid of uranium and other metals, Mr. Naylor reported a discovery of his own, which he practically demonstrated, for obtaining sepia and other warm tones by the addition of a small quantity of bromide of potassium to the developer. A discussion then followed, and a vote of thanks was passed to the President for his able demonstration. The Secretary then handed round some remarkable instantaneous photographs taken on Paget xxxxx plates, giving a fair example of the excellence of these plates for instantaneous work. An excursion to Pinner, under the leadership of Mr. Clapton, was arranged for the following Saturday.

Kensington and Bayswater.—A meeting was held on 11th inst. There were present Mr. T. A. Hahn (in the chair) and seventeen other gentlemen. Mr. Sydney Mote gave a conjuring entertainment, filling the audience with astonishment at the wonderful feats of legerdemain. Mr. G. W. Tottem, from Messrs. Houghton and Sons, gave a practical demonstration on their excellent little hand-camera, called the Shuttle, and various other novelties. Mr. Winter, from Messrs. Mawson and Swan's, kindly showed the Loman patent camera, a novel form of book-camera, walking-stick tripod, etc.

Leytonstone Camera Club.—The members of this club had a most successful outing on the 2nd inst. The place of meeting was Kingston Station. Some good shots were got in the town, it being market-day. The busy market was well patronised by carriers of hand-cameras. The coronation-stone and other historial spots having been visited, the party were ferried over the river, where points of vantage were secured for the bridge and town. The bridge was next crossed, and the party proceeded to the promenade, where some excellent snap-shots on the river were made. Proceeding along to Teddington, some good shutter exposures were made: "The Lock," "Going over the Rollers," "The Weir," etc., etc. The party then adjourned to the "Jolly Anglers Hotel" to a capital tea. The muster was here photographed by one of the members, and a move on to Teddington Station was made. The weather having been splendid all day, the excursion was most enjoyable, Leytonstone being reached about eleven o'clock. The next outing is on the 16th inst., to Cheshunt; meet at Cheshunt Station four o'clock. Visitors heartily welcome.

Lewes.—A meeting was held on the 5th inst., when a small exhibition of hand-cameras was held. Some of the members described the cameras they had in use, and Mr. E. J. Bedford gave a description of several of the latest patterns, which had kindly been lent by Mr. Hardcastle, of Brighton. The certificate for the last quarterly competition, for "the best photograph of animal life," was awarded to Mr. J. Tunks. Mr. Foxhall (Brighton) judged the prints sent in, which were not so numerous as might be desired. The society will make an excursion to Alfriston on Saturday if the weather is favourable. Others have been arranged for Buxted, Newick, and Isfield. The subject for next quarterly competition is "Landscape, with or without Figures." Mr. J. L. Adam was elected a member of the society.

North London.—On the 5th inst., Mr. B. J. Grover in the chair, received with thanks for library, Mr. E. Dunmore's "The Photographer's Companion," Mr. J. Fallowfield's "Photographer Annual." The Secretary reported that he had received a very kindly letter from Mr. J. Howson, of the Britannia Works Company, Ilford, who was to have addressed the meeting on "Isochromatic Photography," stating that he had been called abroad at a few hours' notice on urgent business, and would be unable to be present. The Company had, however, sent as a substitute a large parcel of their new Isochromatic half-plates for distribution among the members, who it was hoped would test and report upon them. Notice of the change of programme had been sent to all members, and a general conversation on technical matters took place, principally on Isochromatic plates. Mr. Brewer showed a successful negative of red roses taken on these plates, and the Secretary, who used hydroquinone (Ilford universal) as a developer, had found the Isochromatic plates most useful. Other members preferred a pyro developer, but all who had tried agreed in the great advantage of the colour correction. The plates received were duly distributed as requested.

North Middlesex.—On the 11th inst., Mr. C. C. Gill in the chair, a technical evening was held. In the unavoidable absence of Mr. F. W. Cox, Mr. F. Cherry opened the discussion on "Development." He dwelt chiefly upon the portraiture side of the question, gave his own method of working, and dealt with the allied subjects of lighting and exposure. Messrs. Beadle, Frost, Marchant, Smith, Taylor, Wall, Mattocks, Tittensor, and the Chairman took part in the discussion, which gradually tended in the direction of the prevention and cure of halation. The comparative difficulties and advantages connected with working celluloid films also attracted attention. Some of the members had found a difficulty in washing film negatives when a number had to be treated at once. Mr. Frost had solved the difficulty by bending the film into a cylindrical form, gelatine side inwards, and tying it round with a piece of thread. A number of them could then be put into a washing trough, and the water allowed to flow through them without fear of injury. They were then hung up to drain in the same state, and when dry the thread could be taken off. Three new members were elected. Prints were then shown as examples of the Eastman gelatino-chloride paper which were distributed at the last meeting, the concensus of opinion being that the paper was good in all respects, and that widely different tones could be secured upon it with certainty and ease. The usual competitions of views taken at field-days were held, the vote of merit being accorded to Mr. Marchant for Broxbourne, and to Mr. Walker for South Mimms. The next meeting will be held on the 25th inst., when Mr. F. Cherry will take the chair, and Mr. Thomas Bedding will address the society. Visitors welcome.

Sheffield.—The ordinary monthly meeting was held on the 5th inst., Mr. B. J. Taylor in the chair, when after the usual routine business of the meeting, and the election of two new members, Mr. C. W. Crowder gave a paper, subject "A Holiday Tour on the Norfolk Broads." He began by describing the journey to Yarmouth, and from thence to various resorts on the Broads, also the best and most convenient means to get there. He had brought back with him some splendid pictures, showing his success, and the grand scenery to be met with all along the district. The Secretary laid on the table samples of the new Eastman's printing paper, also two new photographic journals, and intimated that the excursion to Allport next Wednesday gives promise of a large number taking part in the same.

South Manchester.—On the 27th ult., Mr. W. I. Chadwick in the chair, exhibits of holiday work were brought by Messrs. Bowden, Linnell, Wood, and others; questions were replied to as to toning, etc., of these exhibits. Mr. M. W. Thompstone (Hon. Secretary) read a short paper on the "Platinum Process of Printing," and gave a practical demonstration of the new platinotype paper, in the course of which he showed that prints could be developed by going

over them with a brush charged with the potassium oxalate solution, or by floating, or immersing them in the ordinary way. Over a dozen pictures were thus produced, which were to be preserved in the society's technical folio. After the demonstration many questions were replied to, and various experiences given. Mr. W. I. Chadwick read a paper on "The Magic Lantern," and exhibited a Sciopticon in operation, with a transparent screen made to roll up into a very small space, and supported by a pair of portable legs; the whole of the lantern and screen could be placed on a dining-room table, exhibiting a 3 ft. 6 in. picture, which was considered large enough for most private house exhibitions.

South London.—Ordinary meeting on the 4th inst., the President, Mr. F. W. Edwards, in the chair. Attendance, thirty-three. At the conclusion of the formal business, Mr. J. F. Kelly read a paper, "Can our Excursions be made more Interesting and Useful?" After a brief description of a typical photographic excursion, the lecturer dealt with a large number of suggestions for rendering such meetings more attractive and useful. He considered that excursions should always be arranged to suit the pockets of the majority of the members, and suggested that at the commencement of each excursion a short demonstration by some competent member nominated for the purpose of the practical use of some part of our apparatus in the field, as the proper use of the rising front and the swing, the capabilities of lenses, exposure, and the uses of tables and meters, shutters, etc. He regarded excursions as a means of educating the younger and inexperienced members of the Society, while the more competent workers would use them as prospecting times for more serious work. The announcement at the preceding meeting of the places to be photographed and the points of interest, etc., would be useful. The social side was dealt with. The lecturer urged that excursions should be arranged with some end in view, as, for instance, the illustration of the river Thames from Sheerness to Oxford, a complete series of local views, the monuments of London, etc. Results should be shown at the following society meeting, and a free and impartial criticism indulged in and advice and suggestions given. Mr. Kelly deprecated the practice of stowing away good negatives until the exhibition, for fear that some brother worker might infringe his copyright. The view was not made by the first man, that is common property, and the mind might not be able to so arrange it as to make a picture, or might make a better than if he deserved the credit of it. A set of good lantern slides, illustrating the excursion, should be made yearly, to become the property of the Club, and loaned to members after they have been exhibited at a meeting to be held for the purpose. This meeting might be so arranged as to form a general entertainment by the members, and be productive of general good feeling. Mr. Kelly's remarks were criticised at great length by the members present.

Southsea.—At the ordinary monthly meeting held on the 6th inst. the rules of the forthcoming exhibition to be held in October were drawn up. There was a large attendance of members to hear the announcement of the judge's awards in connection with subjects obtained at the recent excursion to Bosham. Two prizes had kindly been offered by the President (Mr. J. J. Thornton) and the Vice-President (Dr. Ford) for genre subjects and landscapes respectively. Forty-two prints were entered for competition, and were kindly judged by Mr. H. Symonds, of Portsmouth. His awards were as follows:—*Genre subjects:* first, Major Bruno; second, Mr. Ward; third, Mr. Sawyer. *Landscapes:* first, Mr. Fisher; second and third, Mr. Grant. The whole of the prints were passed round for inspection, and were accompanied by the judge's note criticising the work. Several new members have recently been elected, and the society is in a flourishing condition.

Tunbridge Wells.—The ordinary meeting was held on the 7th inst., Mr. Ernest R. Ashton in the chair, the chief feature for the evening being the inspection of some hand-cameras, which had been kindly sent down by the makers for that purpose. Unfortunately, several which had been promised did not arrive, from some unexplained cause. There was a good attendance notwithstanding it was the eve of the election and two very important meetings were to be held by the candidates. Messrs. Marion and Co. sent down one of their "Radial" hand-cameras; the changing arrangement from which it takes its name, and by which any plate can be exposed at will, is very good, and the shutter is arranged so that it can be set whilst the plate is in position. Messrs. Shew and Co. sent down a good assortment, comprising their Academy Eclipse, their half-plate Eclipse with swing front, also another same size with swing back, and an Eclipse with a Ross Eclipse lens working at *f*/5; one of their Universal cameras, arranged as a hand-camera or for ordinary work; one of their Guinea Eclipse hand-cameras, with three double backs and a repeatograph; this is one of the Magazine type, all the others before mentioned having double backs. Messrs. Dunkley and Rogers sent a "B" daylight Kodak; this is one of the Eastman Co.'s new series that allows the spools to be changed in daylight. Mr. Lewis brought a Faeile, the Chairman a No. 3 Junior Kodak, Mr. Morgan one of his new hand-cameras, with a novel focussing arrangement, no cloth being required, Mr. Cassingham also brought "The Surprise," Tylar's "Tit-Bits," Stern's Stereoscopic, The Pearl, and Smith's Patent. Some prints were shown, the result of the excursion to Crowborough. Samples of the Eastman gelatino-chloride printing paper were distributed.

SOCIETIES' FIXTURES.

July 15.—LEWISHAM.—Paper on "Exposure," by M. Stolart.
„ 15.—RICHMOND.—Informal Meeting.
„ 15.—HOLBORN.—Practical Demonstration on "Novelties in Printing Processes," by A. T. Ebsworth.
„ 16.—W. SURREY.—Outing to Shirley.
„ 16.—RICHMOND.—Excursion to W. Drayton.
„ 16.—OLDHAM.—Ramble to Muller's Dale.
„ 16.—ELIZABETHAN.—Outing to Edgware, Whitchurch, and Stanmore.
„ 16.—ASHTON-UNDER-LYNE.—Ramble to Broadbottom.
„ 16.—STOCKPORT.—Ramble to Lymm.
„ 16.—LONDON AND PROVINCIAL.—Outing to West Drayton.
„ 16.—BIRKENHEAD.—Outdoor Competition in the Moreton Neighbourhood.
„ 16.—CARDIFF.—Ramble to Machen, Bedwas, and Ruperra, *via* Caerphilly.
„ 16.—WARRINGTON.—Ramble to Chester.
„ 17.—GORDON COLLEGE.—"Developing."
„ 18.—S. LONDON.—"Photographic Dodges and Combination Printing," by J. Miller.
„ 19.—N. LONDON.—"Holiday Outfits."
„ 19.—HACKNEY.—"Stereoscopic Photography," by W. P. Dards.
„ 19.—BRIXTON AND CLAPHAM.—"Photographic Apparatus and its Use," by the Hon. Secretary.
„ 20.—CROYDON.—Evening Ramble (Botanical),
„ 21.—E. LONDON.—Excursion to Abridge.
„ 21.—NORTHAMPTONSHIRE.—Excursion to Compton Winyeat.
„ 21.—LIVERPOOL.—Excursion to Bebington and Storeton.
„ 21.—WARRINGTON.—Ramble to Nantwich.
„ 22.—RICHMOND.—Informal Meeting.
„ 22.—HOLBORN.—Lantern Night. "A Ramble Round Essex," by A. T. Ebsworth.
„ 23.—PLYMOUTH.—Excursion.
„ 23.—PAISLEY.—Excursion to Ballock.
„ 23.—OLDHAM.—Ramble to Penistone for Wentworth Castle.
„ 23.—BRIGHTON AND SUSSEX.—Excursion to Worthing.
„ 23.—CROYDON.—Photographic Ramble.
„ 23.—HACKNEY.—"Orthochromatic Work," by W. L. Barker.
„ 23.—BLACKHEATH.—Outing to Hampton Court.
„ 23.—LEYTONSTONE.—Excursion to Barnet.
„ 23.—STOCKPORT.—Ramble to Worsley.
„ 23.—OXFORD.—Walk.
„ 23.—CARDIFF.—Ramble to Margam Abbey.
„ 23.—LIVERPOOL.—Waggonette Drive in Cheshire.

Admiral Mouchez, the President of the Photographic Astronomical Congress, and President of the survey of the heavens, is deceased.

The competitions of our contemporary *Science Siftings* have received very wide support, and several well-known workers have been successful in carrying off the prizes.

Mr. J. M'Cleery, Hon. Secretary of the Belfast Y.M.C.A. Camera Club, requests us to notify that all communications should be addressed to him at 14, Wellington Place, Belfast.

The editorial offices of the Optical Magic Lantern Journal have now been removed from Salisbury Square to 55 and 56, Chancery Lane, W.C. Mr. J. Hay Taylor, the well-known editor, will be pleased to see any visitors at the new address.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume.*

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5752. **Burnishing.**—Can any of your readers tell me how to burnish photographs, and what substance to put over the print before passing it through the burnisher? I soak Castile soap and methylated spirits together and cover the print, and when dry I pass it through the burnisher, and I have to pass it through about five or six times before I get a good burnish on it, and the heat I have the rollers is just hot enough for anyone to bear. I shall be much obliged if some of your readers will let me know my difficulty and cause.—S. L. W.

5753. **Whitby.**—I shall be much obliged if any reader will inform me whether there is a dark-room available for visitors at Whitby. If so, please give particulars; also, can one obtain Ilford plates there?—H. W. A.

5754. **Photo-Micrography.**—Will any reader kindly help me with suggestions as to photographing of yeast under the microscope? Hints as to size of objective, kind of light, exposure, and development gratefully received.—E. W.

5755. **Black Varnish.**—Can any reader give me a good formula for black varnish for backing positives?—BLACK ART.

5756. **South Devon.**—Can any reader put me in way of obtaining photographs of the old timber viaducts on the South Devon Railway between Brent and Cornwood stations? With the exception of the Blackford Viaduct, these picturesque relics of the past all have new granite viaducts built alongside of them, and are hardly worth photographing now. The condition of the Blackford Viaduct is rather more favourable at present, but I should prefer to have a view of it taken two or more years ago, before the doubling of the line was commenced.—BEDFORDSHIRE.

5757. **Bournemouth.**—Could any amateur tell me if there is anything in or near Bournemouth worth photographing, as I am going there early in August for a month?—BANTY.

5758. **Washing Prints.**—At the house where I live there is no tap water laid on, the only supply we have being a pump in the yard, and when I am toning prints I have to go out and pump on them to wash them, and again I have always to do it at night, and if I have, say, a dozen prints and got to go and pump on each one, it is very tiring, and one does not much care about it. Can any fellow reader tell me of any way whereby I could tone and wash prints without having to go and pump on them to wash them? I shall be obliged for any suggestions.—ANXIOUS ENQUIRER.

5759. **Weston-super-Mare.**—Can any reader give me any information about photographic bits near this place? A short *resume* of the best bits in the neighbourhood would be appreciated.—NOBBY.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

ANSWERS.

5740. **Wratten Plates.**—Mr. Watkins' latest speeds for the Wratten plates are 8, 40, and 45, or in exposures, ordinary, 5⅓; instantaneous, 1⅓; drop shutter, 1. From our own trials we consider these right.—EDITOR.

5742. **Ross.**—Having the lens, could you not try which stop should be used? If we recollect aright, the No. 2 c. de v. will cover a half-plate, or only just cut off the corners; but how small a stop you must use to obtain sufficiently marginal definition is a matter which you must decide for yourself.—EDITOR.

5745. **Touring (Kent and Sussex).**—Falstaff Hotel, Canterbury; Queen's Arms Hotel, Margate; Bell Hotel, Sandwich; C. Stewart Dunn, High Street, Deal (keeps plates); Royal Oak Hotel, Dover; W. Percy, Leicester House, Grace Hill, and London and Paris Hotel, Folkestone; A. Brooker, 52A, Roberteon Street (keeps plates), and Waverley Hotel, Havelock Road, Hastinge; Castle Hotel, LondonRoad, Tunbridge Wells.—FRANK LITCHFIELD.

5745. **Touring (Kent and Sussex).**—C. Smith will find dark-rooms in the places named as follows:—Canterhury, W. Pollard, 58, George Street; Margate, W. S. Harvey, 20, Market Place; Ramsgate, E. Baily, 9, Queen Street; Dover, J. G. Whorwell, 7, Bench Street; Sandgate, W. H. Jacob, 3, High Street; Hastings, A. Brooker, 52A, Robertson Street; Eastbourne, J. G. Flatman, 40, Pevensey Road; Tunbridge Wells, B. Whitrow, 15, St. John's Road. In addition to above, Birchington-on-Sea, Deal, and Folkestone are included in the AMATEUR PHOTOGRAPHER "List of Dark-Roome" (August 7th, 1891), the namee of which are not published, but lettere of introduction to which are to be obtained on application to Editor of AMATEUR PHOTOGRAPHER.—W.A.W.

5746. **Fixed Focus.**—"Fra" should have given the focus of his lens, as it is not sufficient merely to know that it works at *f*/8. The rule is that if we allow the maximum permissible disc of confusion to be 1-100th of an inch, then the distance *in yards* beyond which all will be in focus $= 2{\cdot}7 \times \frac{a}{f} \times f^2$ (*f* being expressed in inches). As the lens is to work at *f*/8, then $2{\cdot}7 \times \frac{1}{8}$ equals *nearly* ⅓, so the distance in yarde ie *approximately* equal to ⅓ of the square of the focus. As "Fra" does not state his focus, I can only say, as he speaks of quarter-plate, it will probably be from 4 to 5 in., in which case if 4 in., the distance would be 5 yds. 1 ft.; if 4½ in., about 7 yds.; and if 5 in., 8 yds. 1 ft. As regards distance from lens to ground-glass, that will again depend upon focus, but with a 4 in. lens it will be 4 1-12th in. *very nearly*, and with 5 in. lens 5 1-12th in.—W. A. W.

5747. **Stops.**—Either Lancaster, Birmingham, or Henry Park, Acton Street, Kingeland Road, London, would supply these, as they are makers of all sorts of camera fittings and brass work. Focus of lens would have to be quoted, otherwise it would be impossible to calculate correct ratios. The price is not given in their liste, but I believe it would he about 2s. 6d. But has not "Diaphragm" sufficient ingenuity to cut stops out of ferrotype plate, blackening, of course, afterwards with dead-black varnieh, or even at a pinch, out of cardboard and blacken with Indian ink?—W.A. W.

5749. **Distance.**—Everyone has the same difficulty. Distance affects the lengths of exposure, so if you correctly exposed for the foreground you would greatly over-expose for an extreme distance, in the same view, of four miles. There has, however, been put on the market lately a plate having several layers of film on it of progressively slower reaction. This might suit you, if you can develop it right. Your dealer will tell you the name of it.—MORNINGSIDE.

5749. **Distance.**—H. F. B. has probably overexposed. In working with "Wormald" has he noted following extract from preface? "The exposures given in the index tables will be found to be of average duration for most out-door work, but for open landscapes it may be halved, *and quartered for distant views without near foreground*;" *e.g.*, in July, mid-day, sun shining, slow plate, using *f*/32 (small stop desirable for such views), I should give 3-8th second, but should *prefer* diffused light and double exposure. A good plan is for distant views (if camera will admit of it) to employ *back* lens of R.R. only, which *itself* would have effect of *quartering* exposure—so that in that case the tabular times might be used.—W. A. W.

5750. **Holiday Resort.**—I can strongly recommend to "Niepce" Ventnor, Isle of Wight, being both inexpensive and in the midst of most interesting scenery. Dietance from London, about 95 miles. Return fare, 18s. 4d. Exposure, being seaside, full, short, say "Wormald's" tables. Places of interest too many to enumerate; Portsmouth and Ryde on journey, Bonchurch, Shanklin, Luccombe Chine, Blackgang Chine, Carisbrooke Castle, Needles, Alum Bay, Cowes, etc., etc. Lodgings very reasonable; can recommend the Clarendon Boarding House, where terms are from 25e. inclusive (card with Editor).—W. A. W.

5750. **Holiday Resort.**—"Niepce" will be charmed if he tries Harpenden for pictures. It is twenty-four miles from London (Midland main line), four and a half from St. Alhans. It is a country place, full of lovely bits of inland and river scenery. "Niepce" can obtain comfortable board and lodgings at 2, Church Green, Harpenden, and can have use of dark-room, etc., for about the terms he names.—J. A. W.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

U. T. MILLER.—Use ½ oz. of metabisulphite of potash in each solution, and omit the sulphurous acid and sulphite of sodium altogether.

W. R.—The figures in your view are utterly out of place and incongruous, and the lights in the picture are scattered too much, so that the eye wanders over the print and fails to find any rest. Technically it is quite up to standard. Entry form sent on.

G. P. A.—(1) Over-exposed and under-developed, and printed in too strong a light. (2) Decidedly better, but printed in too strong a light. (3) Under-exposed for the dark shadows on right. (4) Very fine. (5) Insufficiently developed. (6) Printed in too strong a light. (7) Good. (8) Printed in too strong a light. (9) Insufficiently developed and over-printed. (10) Good. (11) Under-exposed. (12) Good. (13) Under-exposed. (14) Printed in too strong a light, and over-toned. (15) Under-exposed for all but the water-fall; printed too deep. Your great fault seems to be over-exposure, or else not continuing development far enough. You do not state what developer you are using. Any gelatino-chloride paper would give you better results; in printing, too, you are using far too strong a light, hence the flatness of your prints. Try printing under one or two thicknesses of tissue paper.

W. B. E.—Gelatino-chloride prints stand quite as good a chance as platinum or bromide prints, only as the matt-surfaces are far more artistic, they frequently add to the existent charms of a picture and improve it. We shall be glad to welcome you.

J. TATHAM.—The error was a slip.

V. R. I.—(1) The stains upon No. 1 print look as though caused by contact with metal, on No. 2 by dirty pyro-stained dishes, on No. 3 by some acid having been dropped on the print. (2) The tone is all right, and No. 1 is insufficiently printed; 2 and 3 suffer from halation, and using too much bromide and pyro in developer. (3) No, there is nothing to choose between the two salts; the bicarbonate ie a little stronger, and in powder that is why it is used. (4) 8 gr. pyro is too much; 4 grs. is certainly enough for one half-plate.

JUNIUS.—Provided your negative is not stained by combination of the uranium with hypo, you can remove the intensification by soaking the negative in carbonate of soda or ammonium solution 1:20 for ten minutes, then washing well in water.

ARTIUM MAGISTER.—You give us no idea of what you want the shutter for, nor about what speed. Tylar's window-blind shutter is a cheap efficient one, or a blind shutter such as the Kershaw or Thornton-Pickard is more elaborate and very effective.

H. A. BRAWN.—Never take portraits in the sun; if you do, the result will be patches of white in the print such as you now complain of.

BLACK.—We never have published an article on this particular method, but as a rule black velvet or deep ruby red cloth ie used, and a vignetter inside the camera. We hope to be able to induce the worker you name to give us a little article on this subject. We will, if you like, send you down a sketch of th vignetter.

HIPPED.—The P number we have found to be 50.

J. DENROW.—Fallowfield, 146, Charing Cross Road, sells prepared ferrotype plates, and will send you the formula for developing them. Any of the rapid plates—Fry, Elliott's Studio, Paget XXXXX, Edwards' Isochromatic, etc.—are all suitable for home portraiture.

G. H. HOBSON.—Your letter has been put in the waste-paper basket.

PLATES.—We have received two half-plates, but can find no letter about them.

J. G. S. MACKENZIE—We gave notice in our issue for June 24th of our intention to exclude such queries. In giving the formulæ in French weights, the idea was to bring the whole up to some easily-measurable quantity. The weights are not intended to be the exact equivalents, but of the same value compared to the total amount of eolution. Many thanke for your suggestions; another edition is now on the road, and your suggestions come in very opportunely. (1) Probably because it has been more recommended by the plate-makers than any other preservative, and also partly because it was one of the first recommended. (2) We have not tried the paper eince the new start, but we have heard similar statements from others. Try the Eastman chloride paper. (3) Yes, the German papers are quite as easy to work, and possess distinct features of their own. (4) Strictly speaking it is not right, but in certain cases it is allowable to use it, disregarding the dwarfing or distortion. (5) Are you not over-exposing the rapid plates? in our hands they have always proved to be one of the easiest to obtain density with. Can you send us up a negative or two? (6) The idea of not using sulphite with ammonia is that the plates are more liable to give green fog than when sulphite is used with a fixed alkali. (7) All methylated spirit now contains wood naphtha. Pure spirits of wine will take its place. (8) Any local working opticisn ought to make you one for 5s.; it is not on the market.

BATTY.—Wrench was a well-known optician in the sixties, and had a very good name.

G. TOWER.—The prints would be admissible as landscape.

S. G.—(1) The brown spots are silver stains; there is

no absolutely safe way of removing them. Try sulphocyanide of ammonia 20 gr., ferridcyanide of potash 2 gr., water 1 oz. (2) The negative preserver is satisfactory. (3) Obtain some slow transparency plates, such as Edwards', Fry, Thomas, or Mawson's, and expose to gaslight behind your negative in contact; then develop with ferrous oxalate; you will then have transparencies.

W. R. P.—(1) Almost any red or orange dye would do. The best plan is to varnish the back of the negative with matt-varnish, and then work up with a crayon and stump; almost any of the aniline dyes will serve, which could be obtained from any dealer. (2) The gelatine monntant has decomposed, and should be thrown away. (3) You cannot claim the negative, and 5s. is a very reasonable price for it.

KELLETT.—Obtain some waterproof backing paper as sold by Wheeler and Co. or Percy Luud; mount this with good starch, paste on the back of the prints whilst on the glass, and then, when dry and stripped, mount in the usual way.

F. M. EMARY.—We commence next week or the week after some articles which will tell you all you want to know.

E. MURTON.—(1) Out of focus and over-printed. (2) We should think this was fogged on right hand side, otherwise good. (3) A very difficult subject to take; the negative is too hard, hence the chalky houses. (4) Good, but would be improved by shading the distance in printing. (5) Over-printed. (6) Over-exposed. (7) The distance wants shading; camera was not upright. Not quite up to competition standard. The blocked-up distance is due to using too much reducing agent in the developer. The streaks in No. 5 are due to the brush. Where you get blank white patches in the prints, cover the back of the negative with red matt varnish, and then scrape the varnish off the dense parts so as to allow them to print more than the rest.

W. A. WATTS.—The matter of your letter must stand over till our return from the Convention.

J. WILLIAMSON.—Letter next week.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word: compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* **2½** *per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques or Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.**, *or a commission of* **2½ per cent.**, *upon the sale price of the apparatus.*

Cameras, etc.—5 by 4 camera, three double slides, and Eastman's rollholder, £2 15s. Seen before 7 p.m., Saturday 2.—Bradford, 13, Marine Street, Jamaica Road, S.E.

Marion's half-plate camera, long extension, four mahogany backs, in cases, fitted finder, 4 guineas; Watson's 30s. Cyclist's tripod, sliding legs, sell 17s. 6d.; pneumatic shutter, 4s.; light-tight box for 24 negatives, 2s. See after 7 p.m.—Edwards, 86, Chesterton Road, Notting Hill, W.

Hand-Cameras, etc.—Fallowfield's Facile hand-camera (4 guineas), including two boxes of plates, 4½ by 3½, almost new, camera carries 12 plates, price 3 guineas, bargain.—Herbert, 13, Hugbstead Grove, Garston, Liverpool.

Lenses, etc.—Lancaster's quarter Le Merveilloux, two double slides and case, complete, 21s.—E. Swift, Shaftesbury Drive, Grassendale, Liverpool.

Taylor and Hobson's quarter detective lens, iris diaphragms, Kershaw's shutter, cheap, 60s.; good hand-camera and three best double dark slides, 20s.—H. Cooke, 3, Weekday Cross, Nottingham.

London Stereoscopic Company's quarter-plate R.R., Waterhouse diaphragms, excellent condition, cost 2½ guineas. What offers?—No. 314, office of this paper, 1, Creed Laue, E.C.

Portable symmetrical lens (Optimus 10 by 8), price £3 10s, a splendid instrument; 12 by 10 burnisher (new), 35s., cost £3; also whole-plate ditto, 22s.—Emery, 24, South Street, Baker Street.

Optimus 7 by 5 R.R. lens, almost new, 32s. 6d.—No. 316, office of this paper, 1, Creed Lane, E.C.

Dallmeyer 6 by 5 R.R., cost £5 10s., for 60s.; Newman's shutter to fit, 15s. extra, cost 30s.; Ross' portable symmetrical, 5 in. focus, cost 70s., for 40s.; Optimus Euryscope 7 by 5, cost 9ls. 6d., for £2 10s.—H. H. Parlby, 9, Cradock Street, Swansea.

Sets.—Optimus magazine, 12 quarter plates, Euryscope lens, fitted by Taylor and Hobson with Shew's instantaneous shutter, two barrels to lens, two sets stops, two sets carriers, two finders, level, polished mahogany walking-stick stand, price 5 guineas.—D. S. Bird, Cheam, Surrey.

Half-plate mahogany camera, leather bellows, brass-bound, by Ross, London, three double metal slides (Tylar's), Thornton-Pickard instantaneous time shutter, fit lens 2¾ in. diameter, two-fold ash tripod, leather case with lock, hold camera, etc., set in perfect condition, price £10, camera alone cost £11; approval; deposit.—Apply, Barton, Morriston, Elgin, Scotland.

Camera, lens, and stand, Watson's Premier 10 by 8, for sale, quite new.—No. 315, office of this paper, 1, Creed Lane, E.C.

For sale, half-plate double extension camera with raising front, swing and reversing back, and four double dark slides in case, and three-fold tripod, 60s., or with R.R. lens, Waterhouse stops, and Furnell's shutter, time and instantaneous, £5 10s.—G. Goose, 31, St. Maur Road, Fulham.

Sundries.—Vols. No. 8, 9, 10, 11, 12, 13, 14, 15 of the AMATEUR PHOTOGRAPHER, in excellent condition, only one copy missing from whole volumes, price 2s. each.—Benest, 52, King's Square, Goswell Road, E.C.

Exchange silver, centre seconds, patent chronograph stop watch; want well fitted hand-camera.—Amateur, 38, Washington Road, Sheffield.

AMATEUR PHOTOGRAPHER, 61 numbers, not soiled, 4s. Offers?—Bridges, Carmelite Terrace, Lynn.

Lancaster's 10 by 8 1891 Instantograph camera and one double dark slide, all latest improvements, cost £5 5s., price £3 17s. 6d.; quarter wide-angle lens, by Ross, London (No. 14,064), with two adapters and flange, only £1 12s. 6d.; Lancaster's whole-plate Instantograph shutter, 5s.; lantern lens (no flange), 5s.; 10 by 8 air-tight glass dipping bath and dipper, best mahogany case, screw top, cost 27s., for 14s. 6d.; 10 by 8 glass bath, slightly cracked, cost 27s., for 10s.; diamond detective, 3½ by 2¾, cost 30s., for 18s., good as new.—Hutchinson, Mercer Row, Louth.

200 numbers AMATEUR PHOTOGRAPHER, 100 "Photography," 100 miscellaneous photographic. Reasonable offer accepted.—Field, Montana, Blackheath, S.E.

WANTED.

Background.—Wanted at once, few backgrounds, and accessories.—Bramley, Photo, Hucknall Torkard, Notts.

Hand-Cameras, etc.—Wanted, Kodak, No. 3 Junior, or No. 4 folding, or Shew's Eclipse camera; approval.—A. Huddart, Eskdale, Carnforth.

Negatives.—Stereoscopic negatives wanted, good subjects. State lowest price to A. P. Mann, Stereoscopic Slide Publisher, 48, Elgin Avenue, London.

Sets.—Wanted, half-plate set; will give in exchange quarter brass-bound Instanto 1891, three double slides, lens, shutter, legs, and sling case, with cash to value, or sell quarter set for 55s.—Micklewood, St. Michael's Terrace, Plymouth.

Wanted, Lancaster's half plate International set, good condition; must be cheap for cash.—F. Bailey, 17, St. John's Lane, Canterbury.

Sundries.—Wanted, AMATEUR PHOTOGRAPHER, posted regularly weekly. State lowest price to Copeman, Henstridge.

Bargains in Hand Cameras.—Shew's Eclipse hand-camera, half-plate, latest pattern, fitted, rapid rectilinear, lense, rotating stops, four slides, with carriers for either films or plates, the whole fitted in leather, covered carrying case, a real bargain, take £7 10s. Half-plate Rover, by Lancaster, quite new, Iris stops, all same shutter finder, leather case, take £3 17s. 6d. Stereoscopic Company's Graphic hand-camera, fitted, Stereoscopic Company's black band rapid rectilinear, iris stops, lever focussing, blind shutter, changing box, covered leather, £4 17s. 6d. as new; Clement and Gilmer hand-camera, covered black leather, automatic changing bag, twelve plates, good lens, iris stops, two finders, carries twelve quarter-plates, as new, take 75s.; Optimus magazine hand-camera, carries twenty-three, quarter-plates, fitted Euryscope rapid rectilinear lens, instantaneous roller blind shutter, two finders, as new, take £5 15s.; Lancaster's Omnigraph, covered leather, good lens and shutter, take 17s. 6d; and another, 15s.; Lurzo band-camera, by Robinson, Regent Street, quarter-plate rapid rectilinear lens, time, and instantaneous shutter, finder, and leather case, carries 100 films, £4 10s.; No. 1 Kodak, as new, rapid rectilinear lens, instantaneous shutter fitted, 50 films, covered leather, in case, £2 17s. 6d.; Adams's Ideal, covered leather, new few weeks since, very latest pattern, rapid rectilinear lens, carries twelve quarter-plates, two finders, etc., £5 17s. 6d.; Griffiths ¼-plate magazine hand-camera, carries twelve plates, changing bag, good lens, finder, etc., 22s. 6d.; Samuel's quarter-plate hand-camera for twelve plates, quite new, rapid rectilinear lens, two finders, 32s. 6d.; Ariel hand-camera, Shew's eclipse pattern, leather bellows, quarter-plate, rapid rectilinear lens, rotating stops, Kershaw shutter, three patent Turnbull slides, quite new, take 57s. 6d., all above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

Bargains in Lenses.—For sale, 15 by 12 Optimus wide-angle symmetrical, rotating stops, 10 in. focus, as new, take £4 15s., cost £9, cheap; 12 by 10 European Triplet, by J. Levi, No. 4 B, a really grand article, suit either professioual or amateur for copying and other purposes, quite new, cost £9, take 70s.; 8 by 5 wide-angle lens, fitted rotating stops, *f*/16, rapid rectilinear, best condition, take 27s.; Ross' whole-plate rapid symmetrical, Waterhouse stops, works *f*/8, £4 12s. 6d.; whole-plate rapid landscape lens by Tench (this is really same as Dallmeyer No. 3), rotating stops, grand definition, works *f*/16, will cover 10 by 8, quite new, take 60s, cost more than double; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; whole-plate Suter No. 3, landscape rotating stops, about 12 in. focus, quite new, 37s. 6d., lowest; cabinet portrait lens, quite new, rack focussing, Waterhouse stops, take 25s., cost 60s.; Taylor's and Hobson's half-plate rapid rectilinear, iris stops, good definition, 45s., quite new. Mayfield's 7 by 5 rapid rectilinear, Waterhouse stops, covers well, 32s. 6d. Wray's landscape, casket lenses, 5 in., 7½ in., and 10 in. focus, iris stops, quite new, £3 17s. 6d.; half-plate Lancaster's Instantograph lens, iris stops and instantaneous shutter, as new, 15s.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Rayment, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

Cameras! Cameras! Cameras! Lenses! Lenses! Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchango. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, Corner Leadenhall Street, City (late Goy's Medium).

Bargains in Cameras and Sets.—Optimus whole-plate camera, leather bellows, reversing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterhouse stops, Thornton-Pickard shutter, three double dark slides, three-fold stand and case, £11 5s.; whole-plate Underwood instanto, wide-angle movement, leather bellows, double extension, rapid rectilinear lens, iris stops, fine definition, double slide half-plate carrier and folding stand, as new, take £5 15s.; Adams' half-plate Challenge camera, wide angle, leather bellows, rising and cross fronts, four double slides in cases, fitted, Optimus rapid rectilinear lense, Waterhouse stops, three-fold stand turn table, top solid, leather case, quite new, take £9 10s. Half-plate Duchess camera, all latest movements, etc., Optimus rapid rectilinear lense, fine definition, Thornton-Pickard shutter (time and instanstaneous), two double slides, three-fold stand and case, as new £7 5s. Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; half-plate Underwood's Instanto, warranted as new, reversing back, double slide, rapid rectilinear lens, and folding stand, 75s.; half-plate Instantograph, leather bellows, double extension, Instantograph lens, two double slides and folding stand, best condition, take £2 17s. 6d.; Lancaster's stereoscopic Instantograph, as now, two double slides, 6½ by 3¼ Instantograph lenses, instantaneous shutter and folding stand, take £3 17s. 6d., quarter-plate Le Meritoire set complete, camera, lens, slide and stand, 21s.; quarter-plate 1890 Instantograph, all latest movements, leather bellows, etc., Instantograph lens, shutter, one mahogony and two metal slides, and folding stand, 37s. 6d., all above guaranteed, finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 407. Vol. XVI.] FRIDAY, JULY 22, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Monday Afternoon "At Home" is discontinued for the present, but will be resumed on Monday, the 5th of September.

Our Views.—The Photographic Convention—A Photograph of Lightning—The "Amateur Photographer's Annual" for 1892—Our Supplement.

The Photographic Convention; Exhibit of Apparatus, etc.

Letter to the Editor.—The Blister Fiend (Dick Deadeye).

Articles.—Elementary Photography (Hodges)—Holiday in Norway—A Universal Hand-Camera (Bruno)—The Theory of Development (Armstrong)—Relative Exposure for Varying Proportions of Image to the Original (Debenham)—The Rapid Hydroquinone Developer (Lainer).

Apparatus.—The Bynoe Printing Frame (Beck)—Wormald's Cheap Tripod Stand—Stereoscopic Slides (McLellan)—Everybody's Hand-Camera (Birmingham Photographic Materials Company)—Photographic Tabloids (Burroughs, Wellcome and Co.)—Practical Index of Exposure (Wormald)—The Drayton Mill Blotting-Book (Dray and Son).

Societies' Meetings.—Dewsbury—Fairfield—Hackney—Liverpool—Putney.

Editorial Department—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

Terms of Subscription—

United Kingdom	Six Months, 5s. 6d.	Twelve Months,	10s. 10d.
Postal Union	" " 6s. 6d	" "	13s. 0d.
Out of Postal Union	" " 7s. 9d.	" "	15s. 3d

Trade Advertisements *are received up to Tuesday morning.*

Publishing Department.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 38.—"Inland Scenery with or without Figures." Latest day, July 25th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, August 19th.)

The Photographic Convention has undoubtedly been a very great success. On another page we give the opening ceremony and President's address, which took place on Monday, the 11th inst. Tuesday, the 12th, was devoted to an excursion to Melrose and Dryburgh, about ninety taking part in it.

Wednesday was practically devoted to business in the morning. There was a general meeting, and the venue for next year's Convention was considered. Three invitations had been received, from the Devon and Cornwall Camera Club to visit Plymouth, from Shrewsbury and from the Photographic Society of Ireland to visit Dublin. After considerable discussion, Plymouth was chosen, a proposal that Dublin be chosen being lost.

Votes of thanks to the Lord Provost, to the Board of Manufactures and the Royal Scottish Geographical Society for the use of the hall, and to Mr. Cembrano, the energetic Hon. Secretary, were carried, the latter with resounding cheers. Mr. Cembrano, in his reply, gave statistics as to the numbers, etc., which showed that the Edinburgh Convention was the most successful that had yet been held. Undoubtedly to the Hon. Secretary the warmest thanks are due. He has thrown himself heart and soul into the work, and success has crowned his efforts. After the appointment of the general committee and Council, the members present adjourned to Prince's Street Gardens, close under the Castle, where, on a very well chosen spot, the usual Convention group, in this instance consisting of 130 ladies and gentlemen, was taken by Mr. Aytoun, and a very successful result was obtained.

The afternoon was devoted to the reading of papers, which we shall print *in extenso*. Unfortunately, Messrs. H. P. Robinson and Andrew Pringle were both prevented through illness from being present. Messrs. A. Burchett, Howard Farmer, and F. M. Sutcliffe were also unable to attend. Miss Catherine Weed Barnes, the associate Editor of "The American Amateur Photographer," was exceedingly well received, and her paper listened to with great attention and interest.

On Thursday excursions were arranged for St. Andrews and Dunfermline, under the leadership of Messrs. Cox and Turnbull respectively; both places seem to have well satisfied those attending, the Dunfermline party journeying by rail to Inverkeithing, and walking from there to the Forth Bridge. In the evening more papers were read.

On Friday excursions were made to Dalmeny and Cramond Bridge, Roslin and Hawthornden by coach from Waverley Steps, and in the evening the dinner and smoking.

concert took place at the Waterloo Hotel, nearly one hundred sitting down, including a very good sprinkling of ladies, an innovation which was warmly commended by the members.

After the dinner the usual loyal toasts were given, and then that of the Convention by the President, Mr. George Davison, which was replied to by Messrs. Cembrano and Barclay, the general and local Secretaries. Mr. W. H. Walker proposed "The Ladies," which was respondod to by Miss C. Weed Barnes. "The Press," proposed by Mr. Lang, was responded to by Messrs. Traill Taylor, Sturmey, Wolford, Ward, and Wall. The toast of "The President" was proposed by Mr. C. H. Bothamley, and duly replied to. Mr. H. Smith proposed "Our Absent Friends," and Dr. C. L. Mitchell, of Philadelphia, U.S.A., returned thanks for the gratifying reception recordod to the American representatives.

During the evoning songs were given by Mrs. Mason and Mrs. Warneuke, Miss Barnes reciting an original poem on "Milan Cathedral," and Messrs. Mason, Scott, Cox, Bridge, Crook, Rettie, Werner, Wolford, Cranston still further adding to the harmony of the evening, which was wound up at a late hour by the singing of "Auld Lang Syne." On Saturday morning there was merely a formal council meeting, and the most successful Convention meeting yet held was broken up by the return of the numerous members to their various locales.

ONE of our readers, Mr. Ed. Rice, has kindly sent us a photograph of a flash of lightning of rather curious form, which we reproduce. It is interesting to note how the flash has divided, seemingly lossening in width at each dividing point, and it will be noticed also that the flash did not descend to the earth, but ran along the sky, and in the silver print from which the block has been made it is possible to see that, in some cases, it passes behind little bits of clouds, and in one place on the lower line to the right a fine flash has split off and again joined the main flash further on.

OUR publishers are now ready to deliver copies of the "AMATEUR PHOTOGRAPHER'S Annual for 1892," the publication of which has unfortunately been delayed through unforeseen circumstances.

We believe that this annual is the best that has yet been issued devoted to photography, in the matter of illustrations, which include one bromide print, one silver print, five collotypes, and about one hundred process blocks.

The literary matter contains "A Summary of Photographic Progress during 1891," "Illustrated Notes on Form and Composition in Landscape Photography," in which the author, the Rev. F. C. Lambert, has pointed out the faults and methods of improving the composition of certain pictures, which will be found a valuable practical art lesson. In "Architectural Photography" the Rev. T. Perkins gives clear instructions for following out this useful and interesting branch of photography, and the article is illustrated by four collotypes from negatives by the author.

In the summer our "Queries and Answers" columns are inundated with requests for and details of information as to where to go and what to photograph, and in the "Holiday Guide for Photographers" we have endeavoured to collect together a mass of information which will be invaluable to our readers. Information of about 500 different photographic haunts is given, including distance from town, the railway route, dealers and dark rooms, and also in most cases valuable information as to the best spots to photograph. We think this section of the "Annual" will be found of inestimable value, and, as it is illustrated most copiously, it will be also a guide as to the composition of pictures. A section is also devoted to the leading novelties in apparatus, which will also be found useful.

The work forms a handsome volume of nearly 600 pages, and being neatly bound in scarlet cloth is not likely to suffer from constant usage, as with paper-covered books.

WE regret that in consequence of our absence from town whilst attending the Convention, we shall not issue the Illustrated Supplement till next week, the 29th inst., but we venture to think our readers will not object to the waiting, as it will give us far more time to see justice to the pictures in printing.

Letters to the Editor.

THE BLISTER FIEND.

SIR,—I have been much troubled with this complaint. I have tried a few places in which they said the paper would not blister.



TAKEN ON JULY 5, 1892, BY E. RICE.

I found the methylated advice very good; in fact, when used, blisters did not appear. I put the prints in a bath of the spirit before fixing, one at a time, and let them remain in each five or ten minutes before taking out, and let each one thoroughly saturate. I then fixed in the usual way, and the paper that had previously been all for blistering was thoroughly cured. The only drawback seemed to be that the spirit took all the stiffness or goodness out of the paper, but to a great extent this came back again on drying. Salt and ammonia were of no use in stopping the fiend! However, I was induced to try another brand of paper, as I did not take kindly to the methylated spirit remedy, and I wrote to the Scottish Sensitised Paper Company, 57, Hope Street, Glasgow, for a shilling sample. I used the usual formula with it, and found at last satisfactory results free from blisters, and toning with a beautiful purple colour. I was so pleased with the results that I have procured more from the same Company. In sending this information, if I have done anything towards abating this complaint I shall feel I have been of some little use to amateurs who have been in the same strait as myself.—Yours, etc.,

DICK DEADEYE.

The Photographic Convention.

THE seventh annual meeting of the Convention was held last week in Edinburgh, the actual meeting room being the hall of the Royal Scottish Geographical Society, Queen Street, kindly lent free by the Board of Manufactures. Though other Conventions have been successful it was universally acknowledged that the Edinburgh meeting would eclipse them all, not only in number but also from the fact of a very large proportion of ladies present.

At 7 p.m. on Monday, the 11th inst., the hall was crowded, and the Lord Provost, supported by numerous civic dignitaries and the officers of the Convention, took his stand on the dais, and Mr. L. Blanc briefly introduced the Lord Provost, and spoke of the honour done to Edinburgh in being selected by the Convention.

The Lord Provost expressed the great pleasure it gave him in welcoming to the city of Edinburgh the Photographic Convention of the United Kingdom, who were exponents of the present state of photographic art. To realise the advancement photography had made since its early days, they had merely to compare the first daguerreotypes with the exquisite productions of the present day. Some had said that photography could not be associated with the fine arts, but the sun was merely a brush by which a man produced his individuality on his photographic works. Referring to the possibility of producing photographs in the colours of nature, he said it was, even more than photography itself, in its infancy; something had been done, and much might be anticipated. There was no doubt as to what it was doing for science. Astronomical science in particular had been greatly indebted to photography, which had demonstrated the existence of suns and systems invisible to the eye even when aided by the telescope. However, their great pleasure would at present be in seeing photography developed as a fine art. He hoped the Convention would have a very happy time while in Edinburgh, and that the weather would prove auspicious for their projected excursions.

Mr. C. H. Bothamley, in the absence of Mr. W. Bedford through indisposition, thanked the Provost on behalf of the Council for the welcome accorded. Whilst they had been fortunate in the places hitherto chosen, he was sure Edinburgh would be equal to them. As it was the President's province to chronicle the improvements in photography, he would content himself with briefly introducing Mr. Geo. Davison, who, although not the gentleman first selected for that office—Mr. H. P. Robinson, on whom the first choice had fallen, being unable through physical infirmity to accept the Presidency—was held in the very highest esteem amongst photographers, not only as a successful worker, but also for his tact and organisation, qualities he possessed in the very highest degree.

Mr. George Davison, who was received with cordial applause, then gave his address as follows:—

I wish, at the outset of our Edinburgh meeting, to give expression to the lively feelings of interest and sociability with which, I am sure, photographers from all parts have come together to confer and fraternise with their comrades of the northern capital.

Of all the conventions, conferences, congresses, and association meetings which are organised to further the interests of various pursuits, none, I think, can be held to be more appropriate to a summer gathering than a reunion of photographers, whose practice naturally leads them at this season of the year so greatly to outdoor occupation; and at no place in the provinces more than Edinburgh, in itself, its surroundings and its photographers, could there be greater certainty of finding stimulus to artistic practice as well as to scientific inquiry in photography. It seems natural and right that photographers should gather in this sociable way each summer, and particularly happy that they should meet in this beautiful city on an occasion when the heads of the organisation have signified in some sort their recognition of the artistic applications of photography by seeking as president our veteran in the art, Mr. H. P. Robinson, and, failing him, one younger, though not less enthusiastic in devotion to the same branch of camera craft. I have faith, then, that the cordiality and sociability characteristic of the camera will, in conjunction with a sympathetic seeking of the beautiful, be specially marked and remembered in connection with this Edinburgh meeting. Notwithstanding the jealousies and quarrels of specialists, which, indeed, may be regarded as significant of superabundant life and energy, there is certainly a sympathy felt wherever a fellow-worker in photography is met. As the use of the camera becomes more and more universal, such sympathy and unity may become less and less noticeable, but in the early history of any pursuit they are an important factor in progress. It is to be hoped that, despite all passing dissensions and personal differences, photographers will always foster the fraternal spirit prominently witnessed in the very idea and existence of the Convention we are now holding.

On looking around at the general position in which photography is found to-day, I think there is room for satisfaction at the activity and promise displayed. Photography is extending its borders in every direction. In its capacity as handmaid to other sciences and arts, and in its industrial applications, there seems no limit to its utility. Directly, as a profession, or as a pastime, it also grows apace, and I can see little justification for the prophecy we have all heard that the rage for photography would die out as did that for rinking. So far from this being the prospect, photography, with its attendant incitement to the study of light, optics, and chemistry, its cultivation of the powers of observation, general and artistic, and as an indispensable means of record for travellers, has become a necessary concomitant of our advancing civilisation, and seems likely to extend its influence until the camera will occupy a place in every educated household as naturally as the piano and even, in some sort, will be made part of the ordinary education of every boy and girl.

Having said so much in regard to the general outlook, I propose to direct my remarks chiefly to one particular aspect of our progress in photography, namely, the art aspect. It was, indeed, with some doubt and diffidence concerning my topic that I accepted the honour of the Presidency of this year's Convention. In being called on to address the large body of practical and scientific men who impart life and usefulness to this organisation, and, through them, to speak to many photographers as well as the general public, I felt I could say nothing in technical criticism of recent purely scientific advances or inventions in photography which would not have been already better summarised and explained. Apart from a general and popular interest in these improvements, such observations as I have been able to give have been, as you know, directed in a different channel, and it is only as these new developments and discoveries have seemed to me to have a bearing upon pictorial work in photography that they have had any great attraction for me, and that I feel able to discuss them. I shall have, therefore to ask for the patience of those who, by some misfortune in their constitution, hold that mere picture-making is a waste of time, and that it is only in its applications to science and the industries that photography should be seriously regarded. Despite the expression of such views, I deem it unnecessary, at this date, to argue that photography is capable of direct artistic application. Such a position you will generally agree, it would be absurd to gainsay. The exact extent or limitation of the powers of photography in this direction is a very different matter. New means and new methods are being constantly introduced, and it will be best to leave it to time and steady effort to prove its capacity and its limits. I welcome, however, this public opportunity of renewing, to the fullest reasonable extent, the art claims of photography, and of inciting all photographers with artistic tendencies and ambition to inquire into and apply to their purpose every new means, method, instruments, or practice, which science can devise, or which their insight and needs call for and suggest.

I think the state of photographic art at the present time is not without encouragement. It has passed through several phases. It started under the friendly auspices of recognised artists, many of whom seemed to expect that it would do, automatically, more than, even with training, it can be made to do; and later, when their disappointment came, it has suffered from an equally unreasonable excess of opposition from some of a certain class of painters, who, while using it, find it possible, at the same time, to roundly abuse it. Early in its history it discovered one or two who understood and mastered some of its powers, and that work remains a marvel of excellence and strength or a triumph of skill in the handicraft.

To-day interest in its development has been freshly roused by keen discussions as to the distinctive qualities of photography, as to the naturalness of certain methods of focussing, as to tone relations, and as to the qualities yielded by the several printing processes in respect of gradation, surface, quality, and colour. I am of opinion that there has been a great advance made, and that the improvement is still going on. It has been stated that the imparting of superior artistic qualities by the suppression of definition was an old idea, and had been ably and exhaustively discussed in London societies thirty years ago, and that the present movement would probably die out as that died out. I do not think this is a safe forecast. I have not thought it worth while to inquire how ably and exhaustively the matter was thrashed out, but I cannot but think it must have been a one-sided view, as far as the photographers in those societies were concerned, for none of them seem to have had the courage of their opinion to practically and adequately illustrate the broader treatment. It is a very curious circumstance that almost the only valuable artistic survivals from that period are in that particular broad focussing. I refer to Mrs. Cameron's powerful and original pictures, which, to day, are universally admired. However, the present movement is not confined to matters of focussing, nor is it due to any individual, or clique of individuals. The general result of it is happy, in that many photographers have been set thinking and working, and more general and special recognition of

the artistic powers of photography has resulted. Only a few days ago a well-known and very popular painter, referring to certain pictures of the class indicated, said to me that he wished he had one or two representative photographs of the kind for his painter friends to see. They were quite unacquainted, he said, with what was being done, and could be done, in this direction, by photography. Painters could not be induced to visit photographic exhibitions, and were prejudiced by the great mass of ordinary photographs which are displayed in the shops. In the same way Mr. Seymour Haden recognised in these photographs the power to seize on beautiful impressions of a subject, and secure what he termed painter-like qualities.

Do not let it be thought that I wish to arouse afresh any bitter controversy as to the relative merits of different kinds of focussing. Impressions differ, and truth and naturalness in these matters are as various and defensible as the likes and dislikes of different people. We shall do well to keep each of us to the truth that seems the best truth to us, after fully and fairly trying all; or, better still, to cultivate that frame of mind which leaves us free to apply any and every principle or plan as it seems best to suit the purpose in hand. I frequently see photographs which would be considered quite sharp, possessing most charming qualities, though generally in the direction of the beauties of the miniature or the somewhat rigid steel engraving. My own preference is greatly in the other direction. Photographs in various degrees and qualities of diffused and differentiated focus may still be deficient in some essential qualities, but the general tendency of this treatment seems to me to leave open greater possibilities of securing the broad character of a subject, what has been referred to as painter-like qualities. I do not think it necessary to discuss in detail how far, or if at all, the beauty lies in the use of a rough-paper medium or in diffused treatment; I simply indicate that their tendency appears to me to be towards affording greater scope for, and likelihood of, securing the general sentiment, as opposed to a more detailed and decorative interest in the resulting work. It may be that this is merely a fashion, conventionality in art; but, if so, the conventionality is there, good or bad, and it is certain that results by these methods best please those who have had artistic training. It is merely an accident—or a natural consequence, if you will—that these pictures are open to be mistaken, and are mistaken, for sepia drawings. In the same way, sharp and glossy photographs may be called imitations of the still older miniature paintings. No one method has a monopoly of all qualities. The artist in miniatures may have as much perception as the impressionist of broader treatment, although it be a different perception. It will be best, perhaps, to consult and abide by our individual preferences in this matter, as also in that of the much-discussed question of composition, where there may be a preference for the fascinating excellence and subtle combination and direction of line and arrangement of light and dark in spaces, or, on the other hand, for the charm of naturalness of effect and the spirit and character of natural scenes or incidents. The attitudes in the cultivation of these two excellences are somewhat opposed to each other, and the man who marries the two in his expression by painting, and without seeming effort, is the genius we may all conspire to worship.

Here I am reminded of the very interesting discussion as to the separation or relation of science and art, which has recently gained some prominence in our societies and journals, and which seems particularly prompted in connexion with photography. The photographer, especially in a new and growing art, and one in which the tools are less simple and direct than in other more definitely handicraft arts, cannot afford to disregard any new weapon which seems to promise aid to his purpose, whether given by science or prompted by the practical necessities of other workers. At the same time, any interest in science or mechanical work, apart from its application to the one pictorial end purely, cannot fail to vitiate the character of the result from an artistic standpoint. The argument is the same as in the painter's art. There is a large tract in the domain of the artist altogether uninvaded by science, as the term is reasonably understood. A great painter may be practically scienceless; his knowledge of appearances may have been gained in an unscientific way, and better so. He sees, he knows; and the process of his observation and knowledge, and of the expression of his message, is at present past finding out. At the same time, it cannot be said that artists are better without science. It is, indeed, to their advantage to make use of every new fact and discovery; and art in the present day seems to require more and more erudition. An absolute scientific falsity is a distinct blemish. The case cited by Captain Abney of the painter who painted a rainbow inside out in respect of the sequence of colours, and then charged twenty guineas for setting it right, is a good, if apocryphal, instance. Mr. H. P. Robinson pointed out that the picture was not less beautiful in one way than in the other, and this is true as far as ninety-nine out of a hundred observers would be concerned; but, in so far as the painting is for all, and that spectrum analysts have probably still some slight interest in pictorial art, their feelings ought to be considered, and such a defect should certainly have been wiped out, and without charge. A picture may be great and beautiful in its truth or its fancy, in spite of many technical and scientific ignorances, but it would be better still without such blots. A great natural genius may, straight out of the heart of nature, draw beauties in a way that a student of the very latest theories of light relations, perspective, focus, colour, would miss altogether, but still it is of the utmost importance that all this knowledge should become part of the equipment of every new man who feels a mission to move our susceptibilities by graphic art. It stands out clear that for the average man the two paths of science and art lie apart or diverge. The man who devotes himself to science and to purely scientific habits and research thereby cuts himself off, more or less, from the development of his artistic perception and knowledge. The sciences of colour, and light, and biology, and the knowledge of kindred sciences necessary to master these, form a life work for any one man, as do also the science of appearances and the cultivation of the powers of expression and skill in selection and arrangement. Each man has his natural bent. Nature does not yet exhaust herself in one great stroke by reconciling in any one existence or work the seeming contradictions of science and art.

Adverting to somewhat more practical matters in connection with recent photographic affairs and events, it is hardly possible to pass by altogether, on such an occasion as this, the temporary excitement which has been roused concerning a Photographic Institute, and other attempts to organise concerted action in the form of photographic surveys, geological, local, archæological. Some good work has been instituted in the latter directions by scientific associations, and by a few energetic provincial photographic societies, but it seems to be a matter of some difficulty to secure anything like combined action amongst photographers. Such an end can only be attained by associating those interested in the several applications of photography. The great schemes for an Institute of Photography, in which students could be adequately taught and trained in photo-mechanical processes, in industrial applications of photography, and in methods of scientific inquiry, seem unfortunately to have now been lost and forgotten, notwithstanding the admirable outline suggested in the paper read by Professor Meldola. If such a college or technical institute is to have promising initiation, the first steps must evidently be dissociated from any one association or clique, and even from those who might be called on for some support, namely, those directly interested in photography commercially. Speaking as a practical organiser, I think that with a purely scientific and practical body urgently called together, in the first instance, by such a committee as Captain Abney, Professor Meldola, and Sir Henry Trueman Wood, and chiefly composed of certain representatives from the leading scientific societies—astronomical, chemical, engineering, meteorological, and the like—a dignity would be imparted to the movement which would possibly secure wealthy, energetic, and influential support.

The initiation of a nationally useful enterprise of this kind might be held to come within the scope of the work of the Society of Arts, seeing that the movement is so intimately associated with progress in science and in art, and aims to fill a gap which constitutes a national misfortune. Under the auspices of an independent and powerful organisation the undertaking should surely meet with success, and there would no longer be felt the frequent necessity for going abroad to find practical craftsmen in photo-mechanical processes. The question as to whether photographic art should be included specially as a study in the curriculum of such a college seems to be a matter of divided opinion. For myself I hold there is very great scope for teaching in this direction, and such an institution could not be considered complete without due provision for instruction in portrait and landscape picture-making. At the same time a *complete* photographic college with laboratories would be a great task to contemplate at the outset, and the first, and most probably self-paying, department which suggests itself is instruction in photo-mechanical processes. Probably one of the best introductions to the initiation of an Institute movement would be the holding of a fully representative photographic exhibition, in which the many applications possible to photography should be practically illustrated in separate scientific departments, and the art section placed separately. In face of a cry for a technical school of instruction in the industrial, scientific, and artistic applications of photography, it is a matter for some surprise that such an exhibition, which would be the best practical evidence of the opening and scope for a teaching Institute, has not been arranged. I believe it would prove a natural and easy step to what is desired.

Suggestions have also been revived for the foundation of some kind of State record office, and the value of permanent photographs of many subjects, objects, and individuals in the future would, if judiciously classified, certainly be found to be as great as that of most printed and written documents, some of which, indeed, are priceless. But there seems to be great difficulty in making and

centralising such collections, and each division of applied photography is left to make its own disjointed collections. There is a gallery, or portfolio, of photographic portraits of prominent men and women in course of accumulation, due to the initiative of the Amateur Photographic Association, and deposited, I believe, at South Kensington Museum. Such permanent photographs, more particularly if free from much, or any, retouching, should, in time, help to prove the need for a still more extended work in the same direction.

The subject of photographic exhibitions naturally finds a place in my remarks. I think the tendency in that respect must, from an artistic standpoint, be held to be satisfactory. The more it is regarded, the more, I am sure, it will be seen that any system of classifying artistic pictures, and judging and giving medals to them, is out of place and objectionable. The public interest which is now felt in all the leading exhibitions is quite sufficient to form an inducement in those cases for exhibiting, and the smaller local exhibitions may be left for the moment out of consideration. The best argument to be adduced in support of this view is the success which has attended the International Exhibition at Vienna, the English Exhibition at Brussels, and the practical repetition of this latter at Lincoln, in all of which, by selection and invitation, a better average of excellence and a far greater credit to photography have been the result. In this connexion it will be remembered it has been a frequent custom to divide the art section of photography exhibits into amateur and professional classes. For this, I think, there can be absolutely no defence if the exhibition has any pretensions whatever to be called an art exhibition. In art there can be no division of amateur and professional in the common acceptance of the terms. For the requirements of defensive trade union, or for club and general distinction, the division may be deemed advisable or not, but in art there is only quality—the good and the bad—whether the pictures be for sale or not.

Referring briefly to some recent inventions or introductions which appear to have some relation to art photography, we come first upon the great excitement of photography in natural colours. There is nothing practical as yet in this respect to deal with; but as two of our foremost photographers—one in science, the other in art—have, in the interest of artistic appearances, deprecated any such discovery, may we not ask why this should be so? Should we not rather welcome, with the keenest enthusiasm, a power of colour, confident of ability to avoid the commonplace and the mechanical, and of success in applying it to direct artistic purpose?

In lenses there have been the tele-photographic combinations, introduced here by Mr. Dallmeyer, with which magnified pictures of distant objects, little short of marvellous, are produced, and which, in some cases, it is quite conceivable would be applicable to an artistic purpose. Quite recently the concentric lens of Messrs. Ross has been described and introduced, and this would appear to give the power of diffusion of definition, accompanied by rapidity. How the quality of the definition compares with that of the patient pinhole, I cannot say; but, as far as I have any experience, I have not yet seen any quality of definition so pleasing as that yielded in diffraction photographs, and I would strongly urge the more extended use of pinhole photography. In connexion with lenses for artistic purposes this opportunity may also be taken of drawing attention again to the use of large single lenses opened out to an intensity of $f/4$ or wider, as employed by Mr. Lyonel Clark for portraiture of large heads. The excellent results obtained by him certainly justify and call for a more general practice of the method. Under the head of control by means of lenses, I may refer in general terms to a method of local control, which, I understand, Mr. Van der Weyde has devised, and of which he will shortly give a full description. By this method the relative proportions of features in portraits or of objects in other pictures can be altered at will. The relative increase or diminution of parts can be carried to any extent, and it is evident that the process will be possible of both artistic and grotesque application.

Passing on one step, there has been considerable attention devoted to aids to exposure, particularly in Messrs. Hurter and Driffield's system, on the ground that only by exactly correct exposure can the true relative gradation of a subject be secured. Speaking merely from practical experience, in landscape work, however, the differences in general quality and character in prints from negatives which have received various degrees of over-exposure are not appreciable, provided that a thickly coated sensitive plate be used, and the development be arrested at the right time. The great practical result of Messrs. Hurter and Driffield's admirable work seems to me to be the simplification of development for all photographers. In regard to sensitive plates for the artist photographer, the tendency must, doubtless, be in the direction of thickly coated and orthochromatised plates used with screens. In regard to thick plates, what, as far as I know, is a new departure has been made by the introduction of a plate with emulsions of varying rapidities coated one upon the other, thereby giving great latitude in over-exposure, and greatly obviating halation, one of the most insidious and often unsuspected causes of trouble to the photographer.

It is, perhaps, in respect of new and modified printing processe that the artist photographer of to-day can be most congratulated. No finer results have ever been produced in colour and general quality than the prints obtained by Mr. Lyonel Clark in working what is now known as his toning process in connection with rough-surfaced papers. There, is, however, the doubt of permanency; and the practical and uncongenial difficulties and uncertainties in the preparation of one's own paper are great objections for the artist, who requires all his attention in other directions. Similar appearances have been obtained in bromide papers, and, with the advantage of permanency in platinotype and carbon, and of the newer methods, the interesting kallitype process might, perhaps, be applied in the same manner. A striking novelty for the artist photographer is the method recently introduced by Mr. Willis of controlling the character and effect of platinotype prints by slow local development with a brush, the development being retarded by preliminary treatment of the print with glycerine. The beauty of some of the results by this means in the hands of a competent painter photographer is very noticeable.

Turning for one moment to photo-mechanical processes, there is not much that is new which would seem to have any special application to artistic photography. The use of photogravure by the general worker has not extended as was anticipated, owing, perhaps, to the practical difficulties to be surmounted, and to the greater satisfaction felt in the production of a single direct print superior in most cases in quality to what the engraving process would yield in numbers. As regards photogravures and other photographic reproductions of artists' pictures and drawings for framing and for journal illustrations, there is still much jealous opposition amongst artists and some hangers-on of the press, who take their cue from these artists as to the quality of such reproductions. No doubt, in the cheaper processes, the general gradations of the picture may be modified if the loss be not obviated by special preparation of the picture; but, at the same time, there is retained in these processes or photogravure reproductions so much more of the character and originality of the artist than is seen in any but the very best wood or other engraving that there can, it seems to me, be no doubt about their becoming more and more used.

I have tried to indicate the state of photographic art among us. I think we may be proud that there is more interest in pictorial photography, and greater advance in this respect in our own than in any other country. It is hardly fair to form a judgment from the harsh, uninteresting, and even grotesque illustrations which are from time to time given in foreign photographic journals, and even those in our own photographic magazines are often very little better; but there are other means of judging of the standpoint in this regard of our brethren in France, Belgium, Austria, Germany, and America. I can only say it would be better, in all cases, if these ill-judged illustrations were omitted.

In conclusion, let me urge that we should not fail in keeping up and standing by the dignity and just claims of what we profess and practise. I think I see in the past a steady and even a rapid progress in art photography, and in the future a hope of still further advancement and of a better position. It is this spirit that has animated me in addressing you, and, instead of having to appeal for tolerance, I feel I may make bold to claim a fervour of agreement from you, a union against all enemies, and a combining to overcome all obstacles to our progress.

We shall be sustaining the true and fitting spirit of this Convention if we can all continue to advance together in the science, the art, and the good fellowship of our common object—photography.

Mr. Crooke, of Edinburgh, proposed a vote of thanks to the President for his excellent address, and this was seconded by Mr. W. Lang, jun., of Glasgow.

In acknowledging the vote, the President said that they had to congratulate themselves on having present some transatlantic visitors, viz., Miss Catherine Weed Barnes, of New York, and Dr. Mitchell, of Philadelphia. Mr. F. E. Ives and Dr. Liesegang were unfortunately prevented from attending.

Mr. J. Traill Taylor proposed a vote of thanks to the retiring President (Mr. Wm. Bedford), who was unfortunately confined to his room through ill-health. Mr. Cembrano seconded this, and it was carried unanimously.

Refreshments were served in an adjoining room, and then a lantern entertainment was provided in the large hall.

THE EXHIBIT OF APPARATUS, ETC., AT THE CONVENTION.

The first thing that struck one on entering the hall was the exhibits of bromide print enlargements. At the end of the hall, at the back of the dais, was a fine show of untouched enlargements, by MESSRS. MORGAN AND KIDD, from negatives of F. C. Turner, all of very fine quality. This firm also shows some large enlargements from negatives by Van der Weyde. All the pictures were hung

against a dark-green drapery background, and one and all were of first-class technique and good pictures.

THE EASTMAN PHOTOGRAPHIC MATERIALS COMPANY also show some very fine work, enlargements of extreme beauty and enormous size, some from negatives by Lafayette, and others done at the Paris house. A very striking exhibit of this firm also are some enlargements from negatives of a large variety of dogs by T. Fall. Naturally, considerable interest was evinced by visitors in the specimens of printing on the new Eastman chloride printing-out papers, which gained universal commendation for the beauty of tones. Demonstrations of toning the paper were also given at intervals. A brave show of the new Kodaks was also made on a stand, together with chloride prints and lantern slides from Kodak negatives.

ELLIOTT AND SON, of BARNET, show two fine enlargements in carbon, one a breaking wave, the other a collie taken by Thomas Fall

MR. T. SCOTT, of LEADERVALE PHOTO WORKS, EDINBURGH, has two moonlight carbon enlargements; and MESSRS. A. AND W. SCOTT, of WEST SAVILE TERRACE, EDINBURGH, also show several frames of carbon enlargements.

J. PATRICK AND SON, 52, CORNISTON ROAD, EDINBURGH, show two bromide enlargements, and several fine prints of Scotch views.

THE FRY MANUFACTURING COMPANY, of 5, CHANDOS STREET, LONDON, W., exhibit the enlargement of Mr. J. C. Golding's picture, "Going out to Sea," on rough bromide paper toned with uranium, which attracted a good deal of attention.

F. K. HURMAN and CO., of 2, ST. NICHOLAS BUILDINGS, NEWCASTLE-ON-TYNE, have on show a very fine 15 by 12 studio camera and stand, the St. Klaas; the camera is of excellent construction, and possesses several new features, the back and front both moving with rack and pinions and independent of one another. A special arrangement prevents sagging of the bellows. Three dark slides are provided, one large one with Venetian roller slide for taking direct pictures either way, and two smaller ones with repeating fittings for C D V and cabinets. The stand possesses several features of novel construction, and is extremely rigid.

THOS. J. WALLS, of 47, LOTHIAN STREET, EDINBURGH, shows several novelties, and a hand-camera with dark slides of simple and efficient make. On the same stand is a Champion paper cutter, which takes paper the full size, and has a sliding gauge marked in inches and a cutting guide, shown by WOOD, of KALMAZOO, MICH., U.S.A.

MR. C. BAKER, of 244, HIGH HOLBORN, LONDON, shows a very fine optical lantern with microscope attachment, and a water trough.

MR. A. C. SMITH, of 255, ALBERT ROAD, PECKHAM, LONDON, has a novelty in hand-cameras, the Slide Lock, which carries the plates in sheaths in a magazine in the top, which is provided with a slit through which the plates drop on pressure of a projecting pin. A single lens working at *f*/10 is provided, and a shutter actuated by a lever.

J. F. SHEW AND CO., of 87, NEWMAN STREET, OXFORD STREET, LONDON, exhibit several forms of their well-known hand-camera, the Eclipse, and also their new magazine hand-camera, The Repeatograph, which is extremely ingenious, the plates being changed and shutter set by moving a lever from side to side. On this stand also are to be seen the Daisy metal printing frame, which is very light and small, and has no possibility of warping, the whole being of metal, except the back; and Beales' "Nonactinine," a deep ruby liquid for stopping-out skies, defects, etc., and strengthening weak negatives, or local work.

THE SCOTCH AND IRISH OXYGEN CO., LTD., ROSEHILL WORKS, POLMADIE, GLASGOW, show cylinders for compressed gases, and Brier's patent metallic regulators, both complete and in section, also a new fine adjustment valve. Three cylinders are also shown, which were subjected to very severe tests whilst fully charged with gas; one, 6 ft. 6 in. long, charged with oxygen at 1,800 lbs. per square inch, was dropped 35 ft. four times across an iron block; another was treated in the same way, and then 6¼ cwt. dropped from a height of 35 feet on to it. A smaller cylinder 2 ft. 9 in. long, filled with liquefied carbonic acid, at a pressure of 750 lbs. per square inch, was dropped sideways and endways on to the block, and then flattened by 6¼ cwt. being dropped on to it, but, beyond flattening and bending, the cylinders well withstood the tests.

A. H. BAIRD, of 15, LOTHIAN STREET, EDINBURGH, makes a special show of the Lothian universal plummet, a giant model of this demonstrating its action; the Lothian hand-camera; combined lantern slide masks and binders, etc.; the Todd-Forret magnesium flash-lamp, and Mr. F. Dundas Todd's picture of "The Village Smithy," which won our Silver Medal, taken by the same. A magnificent photo-micrographic camera 10 ft. long, specially made for the Photographic Company of St. Bernard's Row, Edinburgh, is also on view.

W. WRAY, of LAUREL VILLA, NORTH HILL, HIGHGATE, LONDON, has a case full of lenses, both in brass and aluminium fittings, of all sorts and varieties, including the Dctective and casket lenses.

WM. HUME, of 1, LOTHIAN STREET, EDINBURGH, makes a specially good show of his useful and well-known Cantilever enlarging lanterns, the latest and cheaper form, The Nimrod, being prominent. Mr. Hume also shows the Thornton-Pickard shutter and other little appliances.

W. WATSON AND SONS, of HIGH HOLBORN, LONDON, rely upon their Acme cameras and cyclist stand, and have a very good exhibit of the same. The Watson and Vanneck hand-cameras were also *en evidence*, and work done with the same.

R. W. GREEF AND CO., of 29, MINCING LANE, LONDON, make a good display of Rodinal, eikonogen, and a new fixing salt which they are introducing, which has several advantages, and of which we shall shortly have more to say. Negatives, prints, and lantern slides developed with Rodinal are also shown, whilst just above this stall are some fine specimens of printing on Scholzig's sensitised paper.

GEO. HOUGHTON AND SONS, of HIGH HOLBORN, LONDON, have several interesting novelties, amongst them their new revolving table for printing vignettes, etc., which is actuated by clockwork, and will carry one or many frames. A new interchangeable leaf album is also here, the leaves fitting on two pins, and being held down by a cross-bar. The Shuttle hand-camera also attracted a good deal of attention; but the greatest novelty is a new instrument for viewing prints, which is called the "photo-chromoscope." In appearance this looks somewhat like a retouching desk, and cut-out photographs are laid on the slope, with a suitable cloud picture, and by means of side cords the illumination of the same can be changed at will. Some of the night scenes treated in this way are extremely effective.

Elementary Photography.

BY JOHN A. HODGES.

CHAPTER XXV.

PLATES, PAPERS, ETC., AND THEIR PREPARATION.

Technical Knowledge Desirable—"Photography with Emulsions"—Dry Plates—How Prepared—The Emulsion — Sensitiveness—Digestion — Washing — Coating the Plates — The Operation Described—Drying and Packing — Deleterious Influences—A Word for the Plate-makers—Bromide Paper: How Made—Silver Paper — Albumenising — Sensitising — Preservatives—How to Keep Albumenised Paper—Celluloid Films—Drawbacks and Advantages.

ALTHOUGH it is quite possible to become a skilful photographer, and yet know little or nothing of the materials which are used in the production of the pictures, it cannot be doubted but that even a slight knowledge of the nature and preparation of the plates and papers and other materials in common use can be otherwise than helpful in times of difficulty, I therefore make an apology for adding this chapter to the pages of "Elementary Photography." I can, however, only treat the subject in the briefest possible manner, and I would refer the reader who desires to extend his knowledge to Abney's "Photography with Emulsions," a book which all photographers should possess.

Astonishing as the statement may seem, there are not a few amateurs who, though able to produce very passable photographs, are totally unacquainted with the nature and mode of preparation of the sensitive plates and other materials which they are accustomed to use in the production of their pictures, but as I do not wish this reproach to apply to those whom this book may initiate into the mysteries of the art, I trust my readers will peruse and not pass by this chapter.

The modern dry plate consists of a sheet of glass evenly coated with a sensitive preparation technically termed an "emulsion." This emulsion consists of bromide of silver, mechanically suspended in a very fine state of division, in a solution of gelatine. The emulsion is prepared by dissolving either bromide of potassium or bromide of ammonium in water, with a small quantity of gelatine. A second solution is made by dissolving nitrate of silver in water. Then, in

THE IMPERIAL PLATES

SPLENDID QUALITY ! POPULAR PRICES !

THOS. BEDDING, Esq. (British Journal of Photography), writes:

"I am charmed with your Plates."

Sample box of One Dozen ¼ or Half-Dozen ½ Plates, 1s., sent on receipt of remittance.

THE IMPERIAL BROMIDE OPALS.

Finest and Best. Rapid and Slow.

Same Prices as our Extreme Rapidity Plates. Sample ½ doz. ½ Plates 1/6 post free

Our Thickly Coated Landscape Series

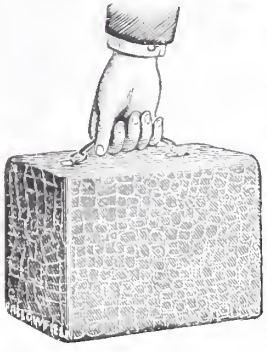
ON SELECTED GLASS.

Same Prices as our Extra Rapid Plates. Sample Dozen ¼ Plates or Half-Dozen ½ Plates 1/3 post free.

THE IMPERIAL DRY PLATE COMPANY, LTD..

CRICKLEWOOD, LONDON, N.W.

"FALLOWFIELD" HAND CAMERA



Carries 12 Plates or Films—Full Size Focussing Screen—Instantaneous and Time Shutter—RR. Lens—Iris Diaphragm.

12 more Plates can be Inserted in Bright Sunlight.

Plates can be Exposed in any Order, and Different Rapidities Carried.



PERFECTION OF ELEGANCE, WORKMANSHIP, AND RELIABILITY,

£7 17s. 6d.

Fullest particulars in 24-page Pamphlet, Illustrated. Post free on application.

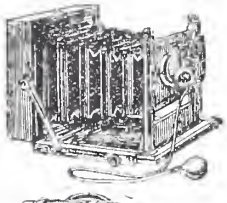
"Facile" Hand Camera at £3 13s. 6d. & £5 5s.

Still "HOLDS THE FIELD" for VALUE & SIMPLICITY.

Ilford P. O. Paper in packets, 16 pieces, 6 x 4¼, 1s.; post free, 1s. 2d. Now Ready.

JONATHAN FALLOWFIELD,
CENTRAL PHOTOGRAPHIC STORES, 146, CHARING CROSS RD., LONDON.

JOHN PIGGOTT.



"MY CAMERA."

Size 4¼ by 3¼, including Rapid Rectilinear Lens, folding Tripod Stand, and fitted with Pneumatic Shutter, and one Double Dark Slide.

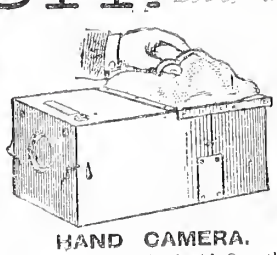
Price complete,	£2 15 0
Size 6½ by 4¾, Do. do. " "	4 10 0
" 8½ " 6½, Do. do. " "	6 15 0
Double Dark Slides, extra, 4¼ by 3¼	0 7 6
" " " 6½ " 4¾	0 11 6
" " " 8½ " 6½	0 17 6
Camera and one Double Back only, 4¼ by 3¼	1 12 0
" " " 6½ " 4¾	2 12 0
" " " 8½ " 6½	3 15 0

Postage 3d



¼ plate R. R. Detective Lens, 3/3

Rebounding Shutters, ¼ pl. 1/-, ⅓ 2/- Postage 3d.



HAND CAMERA.
For 12 ¼-plates, fitted with Samuel's Changing Bag, 21/



MAHOGANY DROP SHUTTERS
For Lenses up to 1¼ in. diameter, with Pneumatic attachment, 3/-



CAMERA CASES.

	¼ plate	½ plate	Whole plate
Solid Leather ...	11/6	12/6	19/9
Canvas Collapsing with sling ...	2/6	3/3	4/9
Postage	3d.	3d.	4½d.



THE WAISTCOAT-POCKET OPERA.
Height 2½ in., weight 5 oz.
This is a powerful Opera and Marine Glass, with a long range and good definition, and is fitted with a compass at one end, diameter of object lens 1 in., price 15/6.



Steel Frame Spectacles— per pair.

Convex only	7d.
Better Quality (concave or convex) ...	1/-
Light Frames	1/10
Pebbles 2/6 and	4/3
Best Finished Frame and Best Pebbles	6/6
Nickelled Curl Side, invisible frames ...	3/-
Cup or Deyes, any tint	3/10
Tinted, smoke or blue (flat glasses) ...	2/3

3d extra for box and postage must be remitted with all orders for Spectacles and Folders.

GOLD FRAME SPECTACLES.
10 carat, glazed with best glasses, per pair 15/6



THE FOLDING TRAVELLER'S LAMP
The most portable Lamp ever made
Price 3/- each.
Extra Lights for ditto, 2d. each. Postage 4½d.
Cheap Cardboard Lamps—
(Folding) 6d. each, Postage 3d.
Do. with tin top and bottom—
1/6 each, postage 4½d.



Please send for "My Camera, and How to use it," by JOHN PIGGOTT, List of Photographic Accessories, FREE.

117, CHEAPSIDE & MILK STREET, LONDON

IN LARGE OCTAVO, HANDSOME CLOTH, 18s.

PHOTOGRAPHY:

Its History, Processes, Apparatus, and Materials: comprising Working Details of all the more important Methods.

By A. BROTHERS, F.R.A.S..

GENERAL CONTENTS:—Part I. Historical Sketch; Chemistry of Photography; Optics of Photography; Light in Photography.—Part II. Processes.—Part III. Apparatus.—Part IV. Materials used in Photography.—Part V. Applications of Photography; Practical Hints.

*** **The Volume is fully Illustrated with Twenty-four Full-page Plates by the different processes described, and contains many Tables and Woodcuts in the Text.**

"A most comprehensive volume. . . . The PRACTICAL HINTS are of GREAT VALUE."—*British Journal of Photography.*

"Certainly the FINEST ILLUSTRATED HANDBOOK to photography ever published. . . . SHOULD BE ON THE REFERENCE SHELVES OF EVERY PHOTO SOCIETY."—*Amateur Photographer.*

A FULL PROSPECTUS ON APPLICATION.

London: CHARLES GRIFFIN & CO., Ltd., Exeter Street, Strand.

the dark-room, the silver solution is added to the bromide solution slowly, and with vigorous stirring, when the bromine combines with the silver, and forms bromide of silver, which is the sensitive silver salt. It is very essential that the combination should take place slowly, in order that the silver bromide may be produced in a fine, and not a coarse condition, the former being found to give better results than the latter. This is effected commercially by special mixing apparatus, not unlike a huge churn in appearance. An emulsion so prepared would be too slow for general purposes, and the vessel containing it is placed in a hot-water apparatus, in which the emulsion is kept at a high temperature, or even boiled, for a certain time, until the required sensitiveness is attained. When this stage is reached, the emulsion is allowed to cool and the necessary quantity of gelatine added, for were the full amount used in the first place and during the boiling process, it would lose its setting properties, and the plates, when coated, would not dry. Before the emulsion is in a fit state for coating the plates, it has to be "washed," in order to remove the soluble nitrate of potassium, which is formed at the same time as the insoluble bromide of silver. The emulsion is forced through coarse canvas, a silver grating, or broken up by other mechanical means into small particles. These are enclosed in a suitable apparatus, and a continuous current of water passed through until all the soluble salts are dissolved. The emulsion is then drained and remelted, when it is ready for coating.

Formerly plates were coated by hand, but now all commercial plates are coated by machinery. An endless band carries the glass plates underneath a vessel containing the liquid emulsion, by which they receive a thin and even coating of emulsion; the endless band, which is kept travelling at a uniform rate of speed, takes the coated plates onward through a short metal tunnel, the outside of which is packed with ice; this causes the films to set, and upon their emerging from the far end, an assistant lifts them off, and stacks them in racks, which, when full, are removed to the drying chambers or darkened rooms through which a continuous current of air is passed, generally by mechanical means. When dry, the plates are, in all good factories, properly tested, and, if approved, passed on to the packers, who do them up in the boxes which are so familiar to photographers.

It will be seen from this brief account that the preparation of an emulsion is by no means an easy matter, and if the reader only knew the infinite care and trouble which the leading plate manufacturers take in order that they may be in a position to offer their customers a reliable article, they would pause before attributing their failures to their plates rather than to themselves. Some plates possess better keeping qualities than others, but all are liable to deteriorate if exposed to damp or the fumes of gas, therefore these adverse conditions should always be avoided.

Perhaps gelatino-bromide paper ranks in importance next to the dry plate. It is, as its name indicates, paper coated with gelatine emulsion. The emulsion is prepared in the same manner as that used for plates, the only difference being that it is far less rapid, and less gelatine is employed. Indeed, in some papers, particularly those with a rough surface, the quantity is reduced to a minimum.

Ordinary albumenised silver printing paper undergoes two processes in the course of its preparation. Large sheets of specially-made paper, usually of German manufacture, are first albumenised by floating on large dishes containing albumen, to which a certain proportion of some soluble chloride has been added. After flotation the sheets are removed, and dried in a warm room. So prepared, the paper will keep indefinitely. This part of the process is very often done in Germany, from which country the bulk of the albumenised paper used in England is exported. The paper is made sensitive to light by floating it on a silver bath containing about 60 grains of nitrate of silver to the ounce of water. After floating for three minutes, the sheets are removed, and hung up to dry in a warm room. Paper so prepared will not keep, and must be used fresh. The method by which the manufacturers confer keeping qualities upon their sensitised papers is a trade secret, but the result may be achieved by floating the paper on a bath of citric acid, or by keeping the paper between folds of blotting-paper, which have been soaked in a saturated solution of carbonate of soda, and dried. The secret of preserving ready-sensitised paper for a long period is to keep the air from it, and the best way of doing this is to store it under pressure, either in a large printing frame or in a press. If it be first wrapped up in some old or discoloured sensitised paper it will be found to keep almost indefinitely.

Glass has until recently been almost exclusively adopted as a support for the sensitive material, but recent improvements in the manufacture of celluloid have led to the adoption of the latter material for the same purpose, and celluloid films, as they are called, are now largely used by amateurs. Their chief advantage lies in the great reduction of weight and bulk, and the absolute immunity from any danger of breakage. The chief and perhaps only drawback to their use is the difficulty experienced in getting them to lie flat in the dark-slide during exposure. This is greatly obviated by the use of a carrier, several patterns of which are now procurable, one of the best and lightest being England's cardboard carrier. The manipulation of the ordinary thick films does not in any way differ from that of ordinary plates, but with the very thin rollable films, a little care is necessary in order to keep them beneath the surface of the developer. If a dish with a plain bottom be used and wetted, and the film then placed in it, the capillary attraction will be sufficient to cause it to adhere, and will prevent it from rising to the surface of the developer.

Photography in Colours.—M. G. Lippmann, who has been continuing his researches, has communicated further results, which appear in the *Comptes Rendus* for April 25th:—"In the first communication which I had the honour to make to the Academy on this subject, I stated that the sensitive films that I then employed failed in sensitiveness and isochromatism, and that these defects were the chief obstacle to the general application of the method that I had suggested. Since then I have succeeded in improving the sensitive film, and, although much still remains to be done, the new results are sufficiently encouraging to permit me to place them before the Academy. On the albumen-bromide of silver films rendered orthochromatic by azalin and cyanin I have obtained very brilliant photographs of spectra. All the colours appear at once—even the red—without the interposition of coloured screens, and after an exposure varying from five to thirty seconds. On two of these *cliches* it has been remarked that the colours seen by transmission are very plainly complementary to those that are seen by reflection. The theory shows that the complex colours that adorn natural objects ought to be photographed just the same as the simple colours of a spectrum. There was no necessity to verify the fact experimentally. The four *clichcs* that I have the honour of submitting to the Academy represent faithfully some objects sufficiently diverse—a stained-glass window of four colours, red, green, blue, yellow; a group of draperies; a plate of oranges, surmounted by a red poppy; a many-coloured parrot. These showed that the shape is represented simultaneously with the colours. The draperies and the bird required from five to ten minutes' exposure to the electric light or the sun. The other objects were obtained after many hours of exposure to a diffused light. The green of the foliage, the grey of the stone of a building, are perfectly produced on another *cliche:* the blue of the sky, on the contrary, was represented as indigo. It remains, then, to perfect the orthochromatism of the plate, and to increase considerably its sensibility."

A Holiday in Norway.

PHOTOGRAPHY AMONG THE FJORDS.

(*Continued from page* 40.)

V.—GUDVANGEN, STALHEIM, AND BERGEN.

FROM Balholm to Gudvangen, our next stopping place, was but a Sabbath day's journey. Therefore the captain steamed past the entrance to the Nærö Fjord, at the bottom of which Gudvangen lies, and took us first to explore the Lyster Fjord, an arm of the Sogne Fjord, opening out from it to the northward. It was Sunday morning, and, as on the sea, so here a Sabbath stillness reigned. Not even a ripple broke the oily placidity of the deep dark waters through which the great ship slowly moved. The long shining furrows that streamed from her prow as she slid smoothly on soon subsided, and all was peace behind us and before. Mirrored in this natural glass lay the hilly sides of the fjord, and the vivid verdure that swept up their lower slopes from the water's edge to where the rocks and trees held sway. Most of the fjords through which we passed were perfectly desolate and uninhabited, the rocks often plunging sheer down into the water, and making a landing impossible. But in the Lyster Fjord it was not so. Nestling amidst the emerald meadows on either hand, here clustered into pretty little hamlets, and there standing separate and alone, were scores of warm and red-roofed houses with fronts of glowing white.

THROUGH THE NÆRODAL.

The afternoon brought us back into the Nærö Fjord to Gudvangen. Thus far the country had been delightfully free from all signs of that degeneration which, in sorrow be it said, too often follows the footsteps of the tourist. The Norwegians are still an unsophisticated folk, generally speaking. But the popularity of their country as a holiday resort is increasing so rapidly that one fears for them. Gudvangen showed us that such fears are not groundless. It is, and it deserves to be, "a show place," because it is the entrance to the magnificent Nærodal. But here for the first time the little children who opened the gates for passing vehicles asked for money, and the *skydsgut* showed an inclination to haggle for more than his proper fare. Still nothing, not even all the beggars in Killarney, nor all the "cabbies" in London, could spoil the grandeur of the Nærodal. To begin with, as one leaves the steamer and lands at Gudvangen, the Kilfos, "the highest perpendicular waterfall in the world," bursts upon one, springing in one magnificent leap of 600 feet from the ledge where it first forms itself, and then wasting its slender stream in shadowy mist before it reaches the bottom of the cliff 2,000 feet below. But far above even the source of the Kilfos the mighty crests of the hills tower, rising in gigantic succession, one after the other, all the way to Stalheim, a distance of seven English miles. So narrow is the valley, so stupendous are the hills, here black and gaunt from the shock of the tempests of ages, there broidered with moss and lichen, and broken by falling ridges of dark dwarf firs, and everywhere

> "overstream'd and silvery-streak'd
> With many a rivulet high against the sun,"

that one is awed into silence. Nature seems so great and man so little. And in the silence come strange fancies, till one can almost hear—

> "Sweet and far, from cliff and scar,
> The horns of Elfland faintly blowing."

It is not hard to understand the origin of Scandinavian mythology when one has been up the Nærodal. Along the bottom of this cleft ravine, and fed by many falls from far up the hills, whirls a mountain stream, glimmering through the trees, dashing over the rocks in foam and fury, and sometimes falling into quiet backwaters, cool and crystal clear. In many places the road, which winds along by the side of this stream, is worn away by some new freshet that has broken from the snows above, and becomes nothing more than the bed of a mountain torrent. At last the dome-like peak of *Jordalsnuten*, one of the most striking of the Nærodal mountains, comes into sight, and beyond it, far up in the hills, the sun flashes on the Stalheim Hotel. Ere that is reached, however, two splendid falls are to be seen, the Sivlefos and the Stalheimsfos, the former of which, as it thunders down its rocky channel, sends up great drifting clouds of misty spray, that ascend like the smoke of a great fire and completely deceive the traveller till he is within a few yards of it.

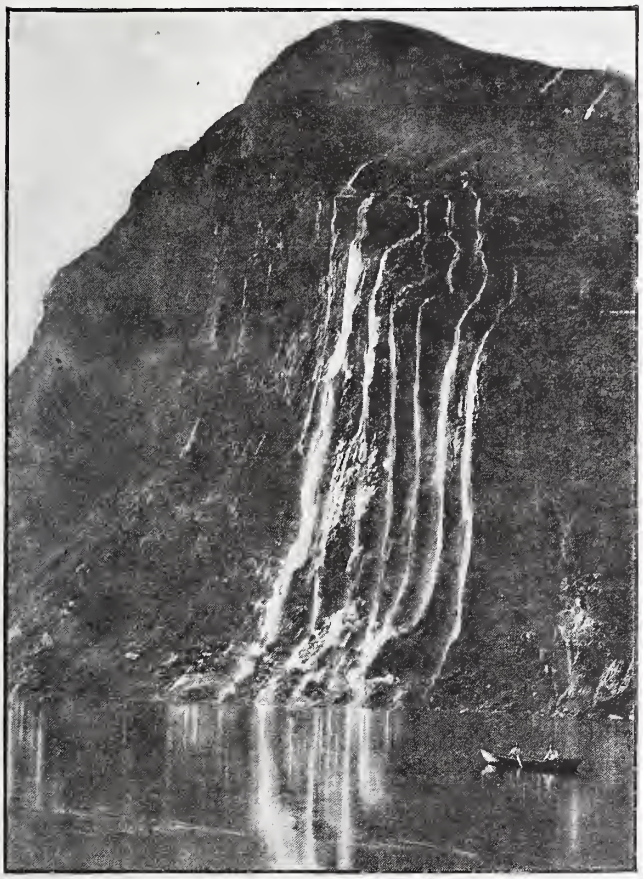


STALHEIM AND THE NÆRODAL.

AT STALHEIM.

Past these, one comes to the *Stalheims-kleven*, a wonderful zigzag road that leads up to the hotel, climbing many hundreds of feet in nearly a score of serpentine windings, and finally giving a glorious view of the valley just traversed. The majestic peaks tower high above one still, but their lower cliffs and falling ridges jagged with pines lie interwoven before one down a vista of seven long miles, the silver stream threading the valley beneath, and the Kilfos, small and dim, making its wonderful leap in the far distance. The Stalheim Hotel is justly praised as one of the

finest in Norway. Its magnificent entrance-hall and dining-room are incomparable, and every window commands a charming view. Here, for the first time too, we saw the national costume worn by the girls who waited at dinner. Very pretty was the effect produced by the vivid colours and the lavish ornament on neck and wrist. From Stalheim some of the passengers went on to Vossevangen, by way of Opheim, Vinje, and Tvinden, repeating their experiences of grandeur and beauty in the Nærodal, and finally reaching Fleischer's Hotel close by the marge of the Vangs Lako. There they slept, and on the morrow took the train to Bergen along a track hewn out of the solid rock almost the whole of the way. There are fifty or sixty tunnels to be traversed during the journey, but one is rewarded by the enchantment of the scenes that burst upon one after emerging from the darkness, by the glimmer of the lakes and the glory of the hills. But there were others who returned from Stalheim through the Nærodal to Gudvangen, and thence sailed out of the Sogne Fjerd, and through the island-studded sea around the coast to Bergen. For them, too, there were beauties by the way. It was enough even to lean over the vessel's side and idly watch the wash that swirled astern in crisp white eddies, and broke into creamy feathery flakes of foam dancing for a moment on the crest of the wave and then dying into the dark-blue sea. It was enough to lie and bask in the



THE SEVEN SISTERS—GEIRANGER FJORD. (*See page* 23)

sun on the forecastle deck, and watch the purple islands as they passed, and to sink into reverie under the spell of the glowing light and the charm of the cœrulean sea; and at last to see in the snowy spray of the breaking waves the milk-white hands of Ocean's fairy daughters beckoning to the great sea halls in the depths below.

In and around Bergen.

So we came to Bergen, perhaps the most picturesque town, as it is one of the largest in Norway. We landed in the *Pudde Fjorden*, and very soon discovered the *Torvet* or central market square, the quaint quays and wharves opening out of the *Strandgaden* to the *Vaagen*, the old park and the *Nygaards Parken*, where excellent music was given in the evening, the *Domkirken* or Cathedral, the museum, and the summit of *Floifjeldet*, the first part of which is ascended by means of the *Dramveien* (literally "dram road) built out of the profit on the sale of spirits, of which Bergen has the monopoly. From this and the six other hills by which Bergen is surrounded—like Rome and its seven hills—the views that may be obtained of the busy town jutting out into the sea, and of the protecting islands that break the force of the outer ocean, are delightful; while inland one catches charming glimpses of the country and the stately Folgefond glacier and of many a hill and lake across the Bjorne and Hardanger Fjords. The *Triangelen*, or fish market quay, close to the junction of *Strandgaden* and *Torvet*, is especially worth a visit, and the *jægter* in the harbour, a peculiar kind of sailing boat, adds to the quaintness of the scene. As for the people themselves, they are uniformly most civil and courteous, casual passers-by invariably lifting their hats. Whenever a shop is entered, too, the same courteous custom is observed as on the Continent. English is very generally spoken, or at least sufficiently well to enable "the intelligent foreigner," who in this case happens to be the Englishman himself, to make himself understood and to procure whatever he may want. The music in the Nygaards Parken in the evening was especially good, and the fine grounds of the park, skilfully laid out, seemed to become the fashionable promenade of Bergen for the occasion. But for the language and a certain lack of finish and style of dress, the crowd might well have passed for English. Bergen, it may be said, or more properly a suburb of Bergen, is the home of Grieg, whose compositions are so characteristic of his native land. He is not without honour in his own country, for we heard that his silver wedding had been celebrated with great rejoicings two days before we arrived.

(*To be continued.*)

A Universal Hand-Camera.

By Major Bruno.

(*Continued from page* 22.)

The various parts of the box, and the interior arrangements being now ready, the next step is to fit them together, and to add the parts necessary to furnish a central swing to the camera back. Prepare two pieces of $\frac{1}{4}$-inch stuff of the dimensions given in fig. 14, viz., 5⅞ inch, by 1 inch. In the centre of each let in a brass plate B, $\frac{1}{2}$ inch by $\frac{1}{4}$ inch, of thin sheet-brass, and drill a hole right through both brass and wood. This hole must be accurately in the centre of S S. The holes should be of such a size that they will take the shanks of the screws which pass through them into the sides of the camera back (see B and D, fig. 11), just an easy fit. The object, of course, is that when the two upright fillets S S (fig. 14) are fixed in the box, the camera back swings centrally between them, pivotted at B in each of the uprights. At this stage it must be clearly understood that a *set-screw* passes through the *left* upright S (*i.e.*, that on the left of box looking towards the front) at B; and entering the bush B (fig. 11), can be clamped or released through the side door. But on the *right* side the upright is screwed to the inner side of the box, and no set-screw is required here; merely a screw inserted in the bush D (fig. 11), with the head removed, so that the shank serves as a pivot for that side of the "back."

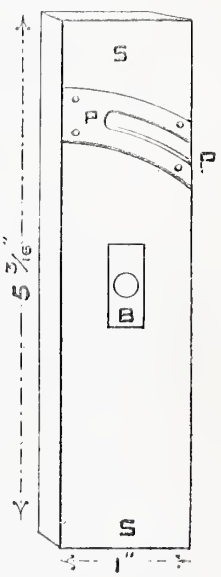


Fig. 14

It will be seen that a plate of sheet-brass, P, with a quadrant-shaped slot, extending through the wood, is let

into the upright S (fig. 14). This also is only required on the left upright, and is for the set-screw passing into the bush B^2 (fig. 11), which firmly clamps the "back" at any point in the slot when swung on its pivots. A sketch of the arrangement is shown in fig. 15, page 21.

The whole of our material being now complete, commence putting the camera together as follows:—Glue and screw the right side of the box (that is, the side on the right in the direction of the front) to the bottom. Next at a distance of three inches from the back (or focussing) end, firmly screw the right upright S (fig 14), to the inner right side of the box, the brass pivot-hole outwards of course. Insert the pivot-screw on right of camera back, and taking the left upright S, insert the pivot *set-screw*, and having the camera back so swung that it will work freely, mark out the position of this upright. It must be exactly opposite the upright already screwed to the inner side, so that the camera back is quite square with the ends of the outer box.

Having marked out its position on the bottom and top of the case, proceed to cut mortice holes for its reception, removing half the thickness only of the wood forming the top and bottom. Now glue and screw the right side to the top of the box, and fixing the left upright S (fig. 14) in the mortice holes cut for it, glue it in. We have now the right side of the box, fitted to the top and bottom, and the camera back swung between its uprights. It is assumed that the bellows and small front are connected to the camera back, and the next step is to fit the stage M (fig. 13), into its grooves on the sides of the box, and when it is found to travel freely

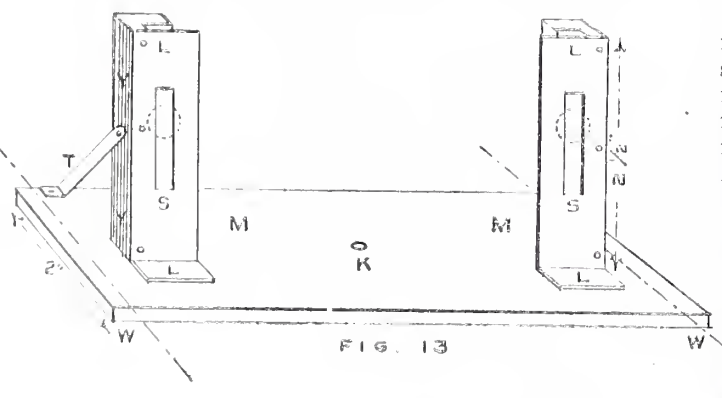


FIG. 13

STAGE FOR FOCUSSING, DESCRIBED ON PAGE 21.

to pass the focussing set-screw through the slot F (fig. 5, p. 435) into the bush screwed into the stage M for its reception. The left side of the box (with the hinged door) can next be glued and screwed to the top and bottom, and the case tested for squareness all round. Having got all ship-shape, screw the cleats A A (fig. 6) and the connecting strip C into position, and slide in the focussing panel B. Next, fit the flap of the door in front of the case D (fig. 8, p. 488) in its grooves on left side of box; slide it in, and the door, when closed on its hinges should fit close up to the top, bottom and sides. Slide the focussing screen into its grooves on the right side of the box, screw your lens into its flanges and adjust it to work smoothly in and out of the shutter when the "front" is focussed, and your camera is complete.

Space is provided for three dark slides, or the roll holder, at the back, and the weight should not exceed 4 lbs., with lens and roll-holder in position. If you have not already adjusted and marked the foci of your lenses on the scale, this must be done, and the final finish given to the box itself. If made of well-marked wood, it should be French polished, or it can be ebonised and left with a dull polish.

It is advisable to use a cover for the case for various obvious reasons, and the best material to make it of is the waterproofed tweed used for lining mackintoshes. It should be procured of a small check or other unobtrusive pattern. Fig. 16 shows the manner in which it can be cut in one piece, and so easily fitted to the box.

S is a slot cut to admit the leather handle we have already screwed to the lid of the box. A is an aperture cut corresponding with the lens aperture in the front of box, and F F are similar apertures for the finder. No bottom is required for the cover, which is slipped over the case and secured with two straps passed round it and through the loops in the handle. Loops to catch on small round-head screws are left at the two ends as shown, and a small hole will be required for the release trigger of the shutter. The cover is also cut to the extent shown by the dotted lines to work the door at side for manipulating the dark-slides, etc. Small catches to hold a card (as a memorandum of exposures) can be screwed to the inside of this door, and the camera is now, in all respects, ready for work. Briefly you have in compact form a hand-camera that will do all a tripod camera will do, and much that it will not. You have the means of making forty-eight consecutive exposures without changing a film, or opening the camera, and with the minimum of trouble. You can equally expose a single plate, no matter what the subject, provided you have lenses of the foci required, together with the means of swinging your camera back to meet the requirements of architectural subjects in a confined space, or to obtain satisfactory sharpness in the various planes.

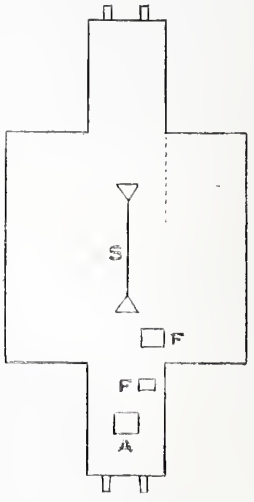


FIG. 16.

Many suggestions have been made as to the most suitable position in which to hold a hand-camera. The writer prefers to hold it firmly to the right side as high as possible with the thumb of the right hand on the trigger. In this position the finder can be watched with ease. Do not attempt impossible subjects when using your camera for so-called "instantaneous" work. A bright light on the subject (not necessarily sunshine) is essential, and there should be an absence of deep shadow. Do not include rapidly-moving objects at a short range, and above all do not bring photography into evil repute by attempting to take people unawares, and without their permission.

In conclusion, a few words on the development of hand-camera work may be of use. Formulæ in shoals have appeared, but the writer prefers the hydroquinone developer, using washing soda and carbonate of potash as the accelerator, not hydrate of soda. If under-exposure is feared, soak your plate for two or three minutes in a weak solution of the alkali. Transfer it to the developing dish and apply the normal developer with very little bromide. This will bring out all detail that particular plate has in its interior economy.

For ordinary exposures in good light the normal developer, applied full strength, should be used, unless the subject possesses strong contrasts, when the pyro or hydroquinone should be reduced. If intended for enlarging, keep the negatives somewhat thin, but for lantern slides or ordinary printing allow them to attain full density. Ordinary

AN UNSOLICITED TESTIMONIAL FROM AN **AMATEUR** OF

22 YEARS' EXPERIENCE.

To Messrs. ELLIOTT & SON,

BARNET, HERTS.

"Dundrennan, Kirkcudbright, N.B.,
23rd April, 1892.

"DEAR SIR,

I yesterday effectually tested a packet of your **Ordinary Barnet Plates** upon Landscape subjects. I used Drop Shutter on every plate, single Landscape Lens, Stop *f*/16, light good, and

DID NOT MISS A PLATE, ALL GOOD,

and without doubt after the full **experience of 22 years** I have no hesitation in placing the **BARNET PLATE** in the very front rank, as a **quick, clean,** and **easily developed plate of the HIGHEST ORDER.**

"Yours faithfully,

"J. COPLAND."

May be obtained of all leading Dealers, or direct from the Works,

ELLIOTT & SON, BARNET, HERTS.

Wratten & Wainwright's
CELEBRATED

"LONDON" PLATES,

"ORDINARY" (15°). For Landscapes, Copying, and Transparencies.
"INSTANTANEOUS" (19°). For Studio and General Work.
"DROP-SHUTTER SPECIAL (24°). For Dull Weather and Hand Cameras. The most rapid Plate made.

Have been manufactured continuously for fifteen years, and have never yet been approached in quality. They are recognised by the most competent authorities as the standard by which all other Plates are judged. These Plates are indispensable for the production of Exhibition Pictures. More High Class Medals have been secured by results on the "London" Plates than all others combined.

Wratten & Wainwright's

SENSITIZED PAPER

HAS THE LARGEST SALE AND HIGHEST REPUTATION, KEEPS WELL, TONES EASILY, AND **DOES NOT BLISTER.**

Post Free—per Quire, 13/6; Half-quire, 7/-; Quarter-quire, 4/-; 3 Sheets, 2/3; Sample Sheet 10d.
Cut Sizes, 1/- per Quire extra.

APPARATUS, CHEMICALS, ETC., OF THE BEST QUALITY ONLY, AT LOWEST MARKET PRICES.
Catalogues and Estimates Free.

WRATTEN & WAINWRIGHT, 38, Great Queen Street, Long Acre, London, W.C.

TELEPHONE NO. 2776. TELEGRAPHIC ADDRESS: "WRATTEN, LONDON."

HAND CAMERAS.

NEW HAND CAMERA, BEAUMONT'S PATENT.—To hold 24 Plates for $3\frac{1}{4}$ by $3\frac{1}{4}$ and $4\frac{1}{4}$ by $3\frac{1}{4}$, fitted with good Lens, Focussing Glass, Finders, and Kershaw Shutter.

THE RADIAL.—Strongly made, the interior being made of metal, will stand all climates, carries 12 plates without sheaths or backing. This Camera can be charged with three different rapidities, which can be exposed in any order as desired. A good many Prize Photos have been taken with the Radial. Made in three sizes, $3\frac{1}{4}$ by $3\frac{1}{4}$, **£5 15 0** and **£6 6 0**; $4\frac{1}{4}$ by $3\frac{1}{4}$, from **£7** to **£10 15 0**; $6\frac{1}{2}$ by $4\frac{3}{4}$, **£12** and **£13.**

ALUMINIUM METAL CAMERA.—2 inches square. A neat little instrument, price complete with Shutter, Lens, and 1 Single Back, **45/-**. Extra Backs, **24/-** doz.

PARCEL CAMERA for $\frac{1}{4}$ Plates. A very handy Camera, size being $8\frac{1}{4}$ by 5 by $4\frac{1}{4}$; price with 6 India Rubber Plate Bags, and Camera covered in paper, **£4 10 0.** If covered in leather, **14/-** extra. Extra Bags, **20/-** per doz.

	Centimetres, 9 by 12.	Centimetres, 13 by 18.	Centimetres, 9 by 18
DELTA CAMERA for 12 Plates.	**£3 3 0**	**£5 5 0**	**£5 5 0**
NORMAL SIMPLEX for 12 Plates	**£8 8 0**	**£14 3 0**	**£14 14 0**

BÄDECKER BOOK CAMERA.—Carries 24 Plates, $2\frac{3}{8}$ by $1\frac{3}{4}$. Price **70/-** complete.

STOCK-TAKING.

Clearance Sale of the undermentioned Cameras less 50 per cent.

	Original Price.	Sale Price.
Krugener's Book Camera for 24 Plates, $1\frac{3}{8}$ square	45/-	22/6
,, ,, 30 ,, $3\frac{1}{4}$ by $3\frac{1}{4}$	150/-	75/-
Academy Cameras for 12 Plates, 2 in. square ...	95/-	47/6
,, ,, 12 ,, $3\frac{1}{4}$ in. square ...	120/-	60/-
,, ,, 12 ,, $4\frac{1}{4}$ by $3\frac{1}{4}$...	150/-	75/-
Enjalbert Camera for 8 ,, $\frac{1}{2}$ Plate ...	200/-	100/-
,, ,, 8 ,, 10 by 8 ...	310/-	155/-
Miniature Landscape Camera for Plates $3\frac{1}{4}$ by $2\frac{3}{8}$	21/-	10/6

Full Particulars Free on Application, also Illustrated Catalogue.

MARION & CO., 22 & 23, Soho Square, London, W.

plates will be found quick enough for the majority of subjects, but a great advantage in dull weather, or afternoon light, is gained by using isochromatic plates.

Any difficulties in construction which may occur in working out the various parts or fitting them together, will gladly be explained through these columns.

The Theory of Development

IN RELATION TO THE ESSENTIALLY ELECTROLYTIC CHARACTER OF THE PHENOMENA AND THE NATURE OF THE PHOTOGRAPHIC IMAGE.

By Henry E. Armstrong, F.R.S.,

Professor of Chemistry in the City and Guilds of London Central Institution.

(*Continued from p.* 28.)

II.—NOTE ON REVERSAL: AN ADDENDUM TO PAPER READ AT CAMERA CLUB CONFERENCE, 1892.

"Reversal" of the photographic image by continued exposure is not only a phenomenon of great intrinsic interest, but is also of considerable practical importance, on account of the limitation of exposure which its occurrence imposes: it is therefore highly desirable that its exact character should be elucidated. Regarding the phenomena from the point of view advocated in the body of the paper to which this note is an addendum, it appears possible to suggest an explanation somewhat simpler—perhaps more probable—than any previously put forward.

There are apparently two ways in which reversal might arise: either (1) as a consequence of the production of a silver compound which is not developable; or (2) as a consequence of the screening of the latent image from attack by the developer.

Both rehalogenation of the latent image and the formation of an inert oxidation product would come under case 1; but it is highly improbable that the former could ever be complete, or cause more than a partial destruction of the image, for whatever becomes of the halogen which is separated by the action of light from the silver haloid, it may be regarded as certain that a considerable proportion would become fixed—especially that taken up by the gelatine in the case of gelatine plates—and unreturnable to the silver. Complete rehalogenation could only occur in the presence of an excess of some haloid compound which would serve as a source of halogen. Again, although it cannot be said that it is impossible to convert a silver haloid by oxidation under the influence of light into an undevelopable oxy-haloid, there seems, at present, to be no evidence that such an action may occur (*cf.*, however, Mr. Baker's subsequent remarks on this point).

Reversal, therefore, more probably arises from the occurrence of changes such as would be productive of the condition contemplated under case 2. The action of light takes place at the exposed surfaces of the silver haloid in contact with the sensitiser, and the production of the image necessarily involves not only the withdrawal of halogen from the silver haloid but also its fixation by the contiguous sensitiser. The image, therefore, as it increases in intensity during exposure, becomes coated with an ever-growing layer of *altered sensitiser*, much as the particles of lead peroxide in a lead—sulphuric acid—lead peroxide voltaic cell during action become coated with lead sulphate; and just as in this voltaic cell action takes place less and less readily, and ultimately ceases long before the peroxide is exhausted, owing to the deposition of the non-conducting sulphate on the peroxide, so it appears probable that the coating of altered sensitiser on the surface of the latent image may, if exposure be sufficiently prolonged, acquire such dimensions as to act as a "non-conductor," rendering development impossible, only those parts of the plate responding which have not received what may be termed the *critical exposure*, and which, therefore, are still amenable to the action of the developer.

It may be difficult to apply this explanation to the phenomena of recurrent reversal, but with regard to these the facts on record are at present far too few to permit of their satisfactory discussion.

(*To be continued.*)

* Read at the Camera Club Conference.

Relative Exposures for Varying Proportions of Image to the Original.*

By W. E. Debenham.

When an enlarged photograph has to be made either from a negative or print, it is commonly understood that the greater the degree of enlargement, the longer will be the exposure required, but I have generally found only the vaguest ideas to exist as to the amount by which such exposure has to be prolonged. Sometimes, indeed, it is assumed that the exposure will be in direct inverse proportion to the area covered, so that a copy of twice the linear dimensions of the original—covering as it does an area of four times the size—would require an exposure of four times that sufficing for a copy of the same size. This calculation, however, omits to recognise an important factor, and leads to serious error; the actual exposure required in the case mentioned (assuming the same lens and stop to be used) being not four times, but two and a quarter times that of a copy of same size; whilst, when we come to high degrees of enlargement, the error would amount to an indication of nearly four times the exposure actually required.

To find the relative exposure, add one to the number of times that the length of the original is contained in the length of the image, and square the sum. This will give the figure found in the third column of the annexed table.

Proportion of image to original (linear).	Distance of image from lens† in terms of principal focus.	Proportionate exposures.	Exposures proportioned to that required for copying same size.
$\frac{1}{30}$	$1\frac{1}{30}$	1·07	·27
$\frac{1}{20}$	$1\frac{1}{20}$	1·10	·28
$\frac{1}{10}$	$1\frac{1}{10}$	1·21	·3
$\frac{1}{8}$	$1\frac{1}{8}$	1·27	·31
$\frac{1}{6}$	$1\frac{1}{6}$	1·36	·34
$\frac{1}{4}$	$1\frac{1}{4}$	1·56	·39
$\frac{1}{2}$	$1\frac{1}{2}$	2·25	·56
$\frac{3}{4}$	$1\frac{3}{4}$	3·06	·76
1 (same size)	2	4	1
2	3	9	2·25
3	4	16	4
4	5	25	6·25
5	6	36	9
6	7	49	12·25
7	8	64	16
8	9	81	20·25
9	10	100	25
10	11	121	30·25
11	12	144	36
12	13	169	42·25
13	14	196	49
14	15	225	56·25
15	16	256	64
16	17	289	72 25
17	18	324	81
18	19	361	90·25
19	20	400	100
20	21	441	110·25
21	22	484	121
22	23	529	132·25
23	24	576	144
24	25	625	156·25
25	26	676	169
26	27	729	182·25
27	28	784	196
28	29	841	210 25
29	30	900	225
30	31	961	240·25

As examples: Suppose a copy is wanted having twice the linear dimensions of the original. Take the number 2, add 1 to it, and square the sum $3^2=9$. Again, if a copy is to be of eight times

* Read before the Photographic Society of Great Britain.

† With a double lens it is usually sufficient to measure from the position of the diaphragm plate.

the linear dimensions of the original; take the number 8, add 1, and square the sum, $9^2=81$. Copies respectively twice and eight times the size (linear) of the original, will thus require relative exposures of 8 and 91, *i.e.*, the latter will require nine times the exposure of the former.

It is convenient to have a practical standard for unity. An image of the same size as the original is a familiar case, and serves as such standard. By dividing the figures in the third column by four, we get at the figures in the last column, which represent the exposure required for varying degrees of enlargement or reduction, compared with the exposure for a copy of the same size.

The table is carried up to enlargements of thirty diameters; that is about the amount required for enlarging a small carte de visite to life size.

The exposures required in reductions do not vary at all to the same extent that they do in enlargements. It has therefore not been thought necessary to fill in the steps between the images of $^1/_5$ and $^2/_5$, and between $^2/_5$ and $^3/_5$ of the size of the original. Beyond $^3/_5$ there is scarcely any perceptible difference in the exposure until disturbance comes in from another cause; a considerable distance of illuminated atmosphere (haze or fog) intervening.

The figures in the second column will also serve as a table for distances from the lens to the plate and to the original; all that is necessary being to multiply by the principal focus of the lens in use. In the case of enlargements the figures less than 2 must be multiplied to get the distance from the original to the lens, and the figures greater than 2 for the distance from lens to image. For reductions, the figures less than 2, multiplied by the principal focus of the lens yield the distance from lens to plate; and the figures higher than 2 similarly multiplied give the distance of original from lens.

The Rapid Hydroquinone Developer.

By PROF. ALEX. LAINER, VIENNA.

DR. MIETHE has published in the "Photographische Nachrichten" an article about developers, referring to my rapid hydroquinone developer.

As the rapid hydroquinone developers mentioned by me have found many faithful adherents on the continent, it might, perhaps, interest the readers of the *Bulletin* to have a more detailed description of the same.

I have worked out four formulas, of which No. 1 is the strongest nd No. IV the slowest in action.

SOLUTION A.*

INGREDIENTS.	FORMULA.			
	I.	II.	III.	IV.
Water	1,000	1,000	1,000	1,000
Sulphite of soda, cryst.	10	30	35	80
Yellow prussiate of potassium	120	90	25	30
Hydroquinone	10	10	10	12

SOLUTION B.

Caustic potassa or caustic soda 250 grams.
Water 1,000 c.c.

For use, mix for each 13 × 18 cm. plate:

Solution A 60 c.c.
Solution B 6.12 c.c.

The softness of the negative will increase in proportion to an increased application of Solution B.

Under normal conditions the development is finished in from one to two minutes. Formula 1, however, can give a completely developed negative in forty-five seconds, which, at continued development, shows only increased density and will lead to the formation of fog.

The extraordinary reducing power of this cheap developer is surprising; the negatives obtained excel by excellent details in the shadows, and are perfectly clear, provided that the emulsion plates are good and that the developer has the temperature of well-water (about 12 degrees C.).

The developer, Formula I, has not been surpassed in rapidity and quality to the present day by any other developer, not even by Rodinal, and I may quote the words of an eminent expert, Dr. Just, who writes about the same in Eder's "Year-Book," 1892:

"The excellent results which I obtained with this handsome developer on instantaneous views induced me last summer to test the same on bromide of silver emulsion paper."

Dr. Just writes further: "Lainer's Rapid Hydroquinone Formula No. I, in concentrated condition, as well as diluted with half or an equal volume of water, is quite an excellent and powerful, if not the most powerful, developer for bromide of silver emulsion paper, provided one is in the position to keep the baths at a temperature of 12 to 14 degrees. Nothing was to be observed of a coloring effect; on the contrary, the whites showed such a brilliancy that pictures developed with oxalate looked yellow when compared with the same."

The developer Formula No. IV contains the most sulphite of soda, that is 80 grams per 1,000 c.c. of water. This developer is not of the same highly energetic action, but it possesses a great durability, and to show its utility I might mention that Captain Ritter von Reisinger developed twenty-one dozen dry plates with half a litre of my developer without even one of the plates becoming yellow.

Plates which fog with the before-mentioned developer are finely developed by application of bromide of potassium; the proportionate quantity to be applied is, for instance:

Solution A 60 c.c.
Solution B 12 „
Bromide potassium solution, 1 : 10 5 to 10 „

In some cases a simple dilution with well-water will act favourably; for instance:

Solution A 30 c.c.
Solution B 3.5 „
Water 30 „

There need be no fear that the development is retarded hereby. Exposed plates which, for instance, showed not the slightest trace of a picture with the pyro-soda developer, gave very good negatives, rich in detail, with the rapid hydroquinone developer. An exposure of one-thirtieth of a second with the relative opening of the objective of *f*/30 gave a fully successful picture in sunlight.

Formula II, besides the proportions for mixture already mentioned, can also be applied with potassa or soda.

Formula II A 60 c.c.
Potassa solution, 1 : 2* 10 „

gives a good negative in two minutes.

Formula II A 60 c.c.
Soda solution, 1 : 5† 12 „

gives a clear, not very strong, negative in four minutes

By addition of a little tincture of iodine 1 : 100, a strong condensation of the highest lights of the negative is prevented; if to 60 A, Formula II and 10 c.c., caustic potass, 1 : 4, 2 c.c., tincture of iodine 1 : 100 are added, the gradation in the high lights is influenced, an increased addition of tincture of iodine leads to total flatness and the fixing proceeds much slower. A small addition of tincture of iodine may be of very good use in some cases.

The developed plates are well washed and then fixed in an acid fixing bath.

I generally immerse the plates after superficial washing, in water containing 1 to 2 c.c. muriatic acid per litre, wash again, and then put them in the acid fixing bath.

The clear, acid fixing bath introduced by the writer, which has a clearing and tanning effect, is produced by adding 50 c.c. acid sulphite solution to a litre fixing bath.

The acid sulphite solution is obtained by dissolving 250 grams neutral crystallized sulphite of soda in 1,000 c.c. of water and adding afterwards 50 c.c. concentrated muriatic acid. The acid sulphite solution keeps for a long time in well-corked bottles.‡

The fixing bath can be acidified repeatedly with this acid sulphite solution, but too great an addition should be avoided because the fixing will be retarded. Many kinds of dry plates

* The several ingredients are dissolved by heat.

* 100 grams of salts of tartar are dissolved in 200 c.c. of water.
† 100 grams of soda crystals are dissolved in 500 c.c. of water.
‡ The commercial acid sulphite solution also works well.

will fix after from ten to twenty seconds, while others, again require just as many minutes. The application of a second fixing bath is to be well recommended.

By a strict observation of the aforesaid the rapid hydroquinone developers will undoubtedly make many friends. Care should be taken that the temperature of the solutions does not increase more than about 16 degrees C.

Finally, I will give you yet a formula of my mixed concentrated rapid hydroquinone developer.

(A.) Dissolve in 100 c.c. water 30 grams sulphite soda, and then 10 grams hydroquinone by heat; further, 25 grams yellow prussiate of potassium likewise in 100 c.c. water. Both solutions are mixed.

(B.) Dissolve 30 grams caustic potassa or caustic soda in 100 c.c. water. After both solutions have been cooled off they are mixed and poured into small bottles, well corked. The mixture is very stable. I have some from November, 1891.

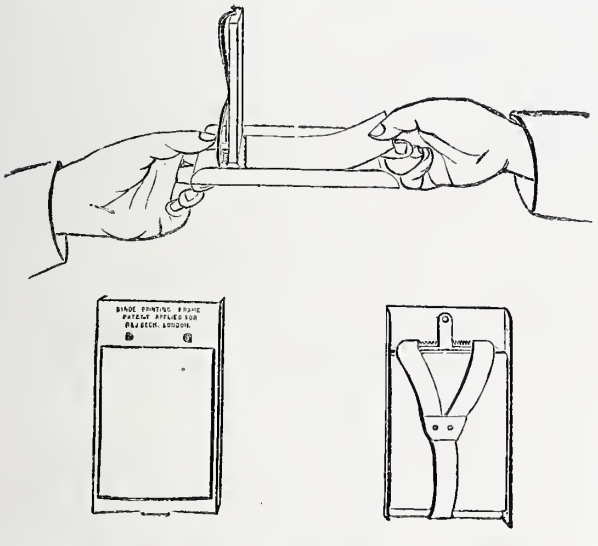
For use, dilute for rapid development 10 c.c. with 30 c.c. water, for slower development with 60 c.c. water.

The developers should not be thrown away after use; they admit of frequent application, and are of good service for over-exposures, whereas over-exposed plates developed with fresh rapid developer would be lost.—*Anthony's Bulletin.*

Apparatus.

THE BYNOE PHOTOGRAPHIC PRINTING FRAME.

Messrs. R. and J. Beck, of 68, Cornhill, E.C., are placing upon the market the above novelty in printing frames.



It is constructed with a metal frame, and is therefore light, strong, and not liable to warp. The negative and paper are placed in the frame by pressure on the small lever, the back having been unclipped and raised as shown in the illustration, and as soon as the negative and paper are in position, the lever is released, a toothed clip firmly grips them, thus preventing any shifting during printing, and at the same time allowing easy examination of the whole print. The back, which is in one piece, gives a very even pressure by means of the spring, which acts on the centre, and is immediately and automatically fastened by a catch. A hole in the lever serves the useful purpose of allowing the frame to be hung up.

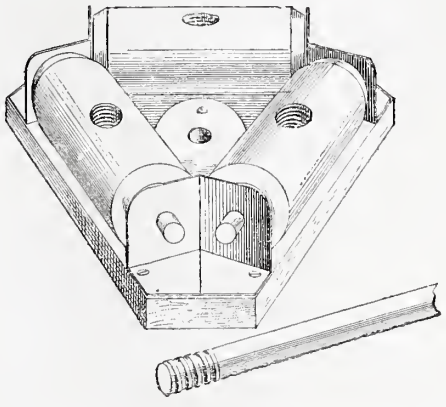
With this new frame there are no shadows on the edges of prints, time and space are economised because there is only one pressure spring to release to examine the print, the whole of which is seen at once. The prices are for ¼ plate, 1s.; for ½-plate, 1s. 9d.; and whole plate, 2s. 6d. The invention is certainly a very useful novelty.

RICHARDS' PATENT CORNERS.

Mr. Thomas P. Richards, of Westminster Chambers, 3, Victoria Street, S.W., has forwarded us some sample boxes of his latest novelty, which consist of small gilt corners to affix prints temporarily or permanently to mounts, albums, etc. They are a decided novelty, and will doubtless find many friends.

WORMALD'S CHEAP TRIPOD STAND.

Mr. A. R. Wormald, of Sutton, Surrey, has submitted to us a new cheap tripod which he is placing upon the market, and which not only possesses several novel features, but has the recommendation of cheapness, its price for ¼ and ½ pl. cameras being only 3s.



As will be seen from the illustration, it is made of wood, and has three wooden rollers into which the legs screw. It is very light, weighing only 1 lb., and is rigid, substantial, and portable, and will find many friends for hand and the ordinary cameras.

STEREOSCOPIC SLIDES.

Mr. J. W. McLellan, of 36, St. Paul's Road, Canonbury, has submitted to us some excellent examples of stereoscopic slides and transparencies. The present revival in stereoscopic work has created a demand for the same, and we are pleased to see the introduction of some new slides from recent negatives; some of the slides represent interior scenes of Westminster Abbey, which are of first-class workmanship and extremely artistic, and the set of zoological studies are well worth seeing. Mr. McLellan is well known as a lantern slide manufacturer.

EVERYBODY'S HAND CAMERA.

The Birmingham Photographic Materials Company, Ltd., of Gladstone Road, Sparkbrook, Birmingham, have sent us one of these little cameras, which are constructed of ebonized wood, and are fitted with achromatic single lens and sliding drop shutter. The dark slide is an extremely ingenious idea, and is especially light, weighing only 2 oz., the camera too weighs only 12 oz. We have actually tested this camera, and find it capable of turning out very good work, although at the low price of 8s. 6d. this might not seem feasible.

THE PHOTOGRAPHIC "TABLOIDS."

(B. W. & Co.)

Messrs. Burroughs, Wellcome, and Co., manufacturing chemists, of Snow Hill Buildings, E.C., are introducing a new variety of their well-known tabloids, viz., the photographic, and in these the pyro and accelerator are separately compressed, and they will be found extremely useful not only in ordinary work but for tourists.

"THE PRACTICAL INDEX OF PHOTOGRAPHIC EXPOSURE."

This useful little companion, compiled by A. R. Wormald, of Sutton, Surrey, has now reached its seventh thousand, and the new edition contains a table of speed numbers, specially compiled from the experience of various workers. A directory of photographic dealers and dark-rooms completes its usefulness.

THE DRAYTON MILL PHOTOGRAPHIC BLOTTING BOOK.

Messrs. G. W. Dray and Son, Ltd., of Great St. Thomas Apostle, Cannon Street, E.C., are placing a very convenient blotting book on the market, at the price of 1s. It may be had either plain or corrugated for plain or matt-surface prints. It is fluffless, and absolutely free from hypo and injurious chemicals, and in the convenient form it is issued will be found exceedingly useful.

Societies' Meetings.

Dewsbury.—Monthly meeting on 14th inst., Mr. A. S. Marriott, President, in the chair. The business consisted of examining the Shuttle hand-camera, specially sent by Messrs. Houghton and Son, London. All its working parts was explained and shown by the Secretary, afterwards the members present fully criticised it. Mr. Mitchell showed one of the Talmer pattern, which gave great satisfaction. Sample packets of a new print-out paper by the Eastman Photographic Company were handed round to members. A number of prints by various members were shown. The Secretary stated that he had tried the new paper by the Eastman Company, and used the Ilford toning bath, but found that after squeegeeing to polished glass, they would not strip from it. Mr. H. M. Smith stated at one of the London societies that the sulpho-cyanate bath softens the gelatine. The Secretary said that putting the prints into an alum bath did not prevent them sticking. Anumber of places were selected as most suitable for society excursions.

Fairfield.—The usual monthly meeting was held on Tuesday the 12th inst, Mr. J. L. Mackrell presiding. After three new members had been enrolled, it was announced that the Council, through the President's efforts, had been enabled to secure a presentation platinotype copy, to each member for the year, of Mr. W. W. Winter's medalled picture "Look, Mamma," which attracted much interest at the late exhibition, catalogued at two and a half guineas a copy. Mr. W. T. Sutton submitted his report *re* new rooms, and it was decided to remove to the High School, Fairfield, in September next, this arrangement enabling the Council to offer more meetings, classes, etc. Mr. Mackrell received a special vote of thanks for his efforts *re* the copy, and afterwards Mr. Chas. Timmins exhibited his 8 by 5 camera, got up almost instantaneously, as a hand-camera. The idea was certainly novel and ingenious, as well as practical. Mr. Timmins was told he had scored well, and was heartily thanked for not keeping his idea dark, as so many do.

Hackney.—The usual weekly meeting held on the 12th inst. was conducted by Mr. Beckett, as Chairman, in the absence of Mr. J. O. Grant, and work done on excursion to the Zoological Gardens was shown by Messrs. Sodean, Dean, Nunn, Roder, and the Hon. Sec. Mr. Pollard showed some prints, taken whilst holiday-making, of Tintern Abbey. He was asked if he had permission to photograph there, but he stated he had to pay 2s. 6d. to do so. Mr. Reynolds asked could he use an ordinary redueing solution for Sandell plates when necessary, as he could not manage that quoted. The Chairman preferred Howard Farmer's formula. The ferricyanide would get exhausted after a time. Mr. Sodean said in using too much ferricyanide there would be a loss in the shadows. Mr. Gosling asked if anyone had obtained too much density with Ilford pyro formula. The Chairman observed that if that was so too much pyro was used. The Chairman then called upon Mr. Hill to give a demonstration of the Cresco-Fylma process. Specimens of the process were passed round. The idea was that on immersion (into the above-mentioned solution) of a positive or negative the film would leave the plate and expand into nearly twice the size (demonstrated, with result that equal enlargement took place), and was then transferred to either an opal glass or paper in case of a positive, or glass for negative. The after process was precisely as would be the case of an ordinary print or negative. Mr. Hill stated that hydroquinone was the best developer to use for producing the original negative; alum would act as a repellent, so was not advised; citric acid could be used in pyro. Mr. Barker asked if alkali would affect the stripping. Mr. Hill advised carbonates in preference to hydrates, though ammonia would enlarge perhaps better. Mr. Poulson wanted to know if, in drying, dust was likely to affect the plate, but was informed that it would be perhaps better to wash. Mr. Gosling then gave a demonstration on "Development." He advocated the old theme of one developer, and he preferred pyro soda. He was an "Ilford" man, he said, as he had learnt all he knew from "Scraps," and consequently the plates, etc., he used were of that firm's manufacture. He then developed a negative and lantern plate, but used too deep a light (in the general opinion of those present), which was constructed (for the occasion) out of a biscuit tin.

Liverpool.—At the ordinary meeting on the 13th inst., the President (Dr. Webb) in the chair, there was a large attendance of members to hear Mr. W. Haywood's very interesting and instructive remarks upon the subject for the evening, viz., "Comparison of the Rosset Excursion, Exposures and Results," in the course of which he showed upon the blackboard the great differences in the stops used, and the exposures given for each view taken; yet from the negatives and prints that were produced for inspection (showing good results in almost every case) he concluded that careful development had saved many of the plates, and that the plates themselves allowed a deal of latitude in exposure. A hearty vote of thanks was accorded to Mr. W. Haywood. Mr. Yule (who seconded) said these practical demonstrations were of great use, and that Mr. Haywood's was the best that he had had the pleasure of seeing. During the evening samples of plates, paper, and books were distributed to the members, and gratefully acknowledged, from the following firms, viz.:—The Paget Prize Plate Co., sample packets of their various plates; the Eastman Photographic Materials Co., new gelatino-chloride printing out-paper; the Ilford Co.'s pamphlets on Isochromatic Photography, and Messrs. Mawson and Swan's exposure books. The Ilford Co. also presented a manual for the library. The Eastman Co.'s further presents of two large framed enlargemen's were hung upon the walls of the club-room, as was a large framed enlargement of views from the Paget Prize Plate Co., and these were suitably acknowledged. In response to a letter from Mr. F. C. Beach, the Editor of the *American Amateur Photographer*, asking the club to sign a petition in favour of free photography at the Chicago Columbian Exposition, it was resolved that the President should sign it, as a protest against one or two firms having a monopoly of photographing the exhibits, etc. The club is now supplied with appliances for developing and demonstrations, and a library for the members' use. The excursions for the month are to Bebington and Storeton on the 21st, and a waggonette drive to Cheshire on the 23rd.

Putney.—The ordinary meeting was held on the 4th inst., Rev. L. Macdona in the chair. Messrs. Faulkner and Macdona gave a demonstration in development with Rodinal and pyro-soda, showing how the results of a considerable over or under exposure may be corrected by suitable modifications of the constituent parts of the developer; the demonstration was followed with much interest by the members present. Messrs. Faulkner and Zachariasen exhibited prints on the new "Eastman" chloride emulsion paper, which were greatly admired. Sample packets of the paper, presented by the Eastman Company, were distributed for trial amongst the members. Tylar's "Full-view" printing frame, an improved metal single dark slide, and other novelties were shown and discussed. Four new members were elected. The Society having joined the affiliation scheme of the Photographic Society of Great Britain, Messrs. Macdona, Vice-President, and Zachariasen, joint Hon. Sec., were elected delegates to serve on the Central Committee of the Affiliated Societies. The summer outings, held on alternate Saturdays, to places in the neighbourhood have been very successful; many good negatives have been taken and will no doubt give additional interest to the competition amongst members for the Society's medals. The outings have been particularly instructive to the beginners, who have been able to profit by the kind assistance given them by the more proficient. The next outing will be held on Saturday, July 23rd, at 3 p.m., at Hampton Court.

SOCIETIES' FIXTURES.

July 22.—RICHMOND.—Informal Meeting.
,, 22.—HOLBORN.—Lantern Night. "A Ramble round Essex, by A. T. Ebsworth. Members, please bring your friends and slides.
,, 23.—LIVERPOOL.—Excursion to Chester.
,, 23.—PLYMOUTH.—Excursion.
,, 23.—PAISLEY.—Excursion to Balloch.
,, 23.—OLDHAM.—Ramble to Penistone for Wentworth Castle.
,, 23.—BRIGHTON AND SUSSEX.—Excursion to Worthing.
,, 23.—CROYDON.—Photographic Ramble.
,, 23.—HACKNEY.—"Orthochromatic Work," by W. L. Barker.
,, 23.—HACKNEY.—Excursion down the river.
,, 23.—BLACKHEATH.—Outing to Hampton Court.
,, 23.—STOCKPORT.—Ramble to Worsley.
,, 23.—LEYTONSTONE.—Excursion to Barnet.
,, 23.—FAIRFIELD.—Excursion to Chester.
,, 23.—GORDON COLLEGE.—"Enamelling."
,, 25.—HACKNEY.—Excursion to Chislehurst. Visitors welcome.
,, 26.—GREAT BRITAIN.—Technical Meeting. "Modern Developers."
,, 26.—CLEVELAND.—Toning.
,, 26.—E. LONDON.—Ordinary Meeting.
,, 26.—HACKNEY.—Discussion on Stereoscopic Photography.
,, 27.—LIVERPOOL A.P.A.—Excursion to Shrewsbury.
,, 27.—LIVERPOOL CAMERA CLUB.—Exhibition of Prints, and Discussion upon.
,, 28.—HOLBORN.—Official Outing to the Southern Counties.
,, 28.—STOCKPORT.—Ramble to Worsley.
,, 28.—OLDHAM.—Meeting at 7.45 p.m.
,, 29.—RICHMOND.—Show of Prints.
,, 30.—WARRINGTON.—Excursion to Appleton.
,, 30.—OLDHAM.—Ramble to Plumbley for Halford Hall.
,, 30.—ASHTON-UNDER-LYNE—Ramble, Hadfield to Crowden.
,, 30.—STOCKPORT.—Ramble to Chester.
,, 30.—LEYTONSTONE.—Excursion to Greenwich.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

QUERIES.

5760. **Platinotype.**—Is there any license required for the working of platinotype, and is it as simple as other methods, and what the cost and requirements in apparatus; is it different to Lyonel Clark's platinum toning?—PLATT.

5761. **Seplatype.** — How are the sepia photos worked; is there any special method, and what is it?—PLATT.

5762. **Hand-Camera.**—Can any reader tell me what is the best focus to have in a hand-camera, 4½ in. to 5⅛ in. or more?—FOLIAGE.

5763. **Whitby.**—Can any friend tell me where to find in Whitby the houses illustrated in the *Queen* of 9th July, best time of day to take them; also where to find Unstead Bridge (see the *Queen*, 9th July) and other good bits?—C. H. G.

5764. **Sulpho-Cyanide Toning Bath, Ilford Formula.**—I made up the above about three to four months ago, and toned one whole-plate print, and have not used it since until last week, when the prints went a dirty yellow. Can anyone tell me the cause of same, and how long the bath will keep good?—AMATEUR.

5765. **Ferrotypes.**—Will any reader kindly inform me how to take photographs on dry ferrotype plates so as to finish one in a few minutes as the men do that take photographs in the street; what developer should I use, and the method of using it? Are there any glass dry plates that take a positive instead of a negative; if so, where can I obtain them both in glass and metal ferrotype?—S. H. HOLLOWAY.

5766. **Sat. Sol. Hypo.**—What is the strength of a saturated solution of hypo—*i.e.*, what quantity of a saturated solution would equal 1 oz. avoir. of dry hypo?—HYPOSTATIC.

5767. **Distant Photography.**—Can any reader tell me how to photograph objects at a distance through a telescope; also regarding exposure for same?—VIEW-FINDER.

5768. **Ostend.**—Will anyone kindly inform me if there are any restrictions to amateur photography in this town, excepting fortifications, of course; also if a hand-camera can be used in the grounds of Kursaal? Any other information will greatly oblige.—ÆSOP.

5769. **Studio Builders.**—Will some of your readers, or the Editor of the AMATEUR PHOTOGRAPHER kindly give the names and addresses of some studio manufacturers.—J. SMITH.

5770. **Stratford-on-Avon.**—Will any reader kindly give me a list of places worth photographing in and just outside Stratford, sufficient for one day's work (say about twelve views)—TOURIST.

5771. **Fixed Focus.**—I must apologise to W. A. W. for having forgotten to give the focus of my lens. I meant the point beyond which an 8 in. focus rapid rectilinear lens would always be in focus. Could any one kindly tell me whether I should have to stop the lens very much down that it should give a good depth of focus? Which stop, for instance, and what distance would the lens be from ground-glass? I meant to use this half-plate lens on a quarter-plate hand-camera.—FRA.

QUERIES UNANSWERED.

July 15th.—Nos. 5752, 5753, 5756, 5759.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

ANSWERS.

5743. **German Work.**—One of the best elementary works is Pizzighelli's "Anleitung zur Photographie," published by Wilhelm Knapp, Halle a/S.—EDITOR.

5744. **Blisters.**—The cause of the plates blistering is undoubtedly the caustic soda in the developer. Reduce the amount of caustic and replace with carbonate, and you will probably have less cause of complaint.—EDITOR.

5748. **Eastbourne.**—This is a very good centre; Hastings, St. Leonards, Battle Abbey, Hurstmonceaux, Pevensey, Rye are all near. A hand-camera is almost a *sine qua non* for beach work.—EDITOR.

5749. **Distance.**—In taking open views with a distance which it is desired to obtain, isochromatic plates and a yellow screen are essential. A full exposure should be given if there are any dark objects in the near foreground. In development, commence with 1-10th of a grain of pyro to the ounce, normal bromide and normal accelerator. As soon as the whole of the image is visible but very faintly, throw off developer, and apply one strong in bromide, strong in pyro and accelerator, and allow it to gain density.—EDITOR.

5751. **Portsmouth Dockyard.**—Probably a request to the superintendent of the dockyard would obtain all the information you desire.—EDITOR.

5754. **Photo-Micrography.**—As the cells of yeast vary from 1-2400th to 1-3000th of an in. in diameter, a power of 500 diameters would be about the lowest to satisfy E. W.'s requirements. This could be got by using a 1-6th in. objective (as it is not wise to use more than eight times the initial power of the lens unless it be a very good one), but of course a higher power could be used. The light might be sunlight, lime, or paraffin. Any developer will answer, but hydroquinone is a good one for this work. It is hard to give the exposure, as it depends on such varying conditions. The following may help him: I took a good exposed negative of the acrospores of Peziza × 700, with a 1-6th Zeiss apochromatic, substage condenser, Ilford Isochromatic plate, screen a weak solution of fluorescine, light lime, mixed jet, in 10 sec.; also with same objective, one of Navicula lyra × 767, with cheap form of Webster condenser N.A. 65, plate Paget XXXXX., lamp one inch wick paraffin, in 8 min. The lens which E. W. used would probably answer for the work, but if he wants to buy one the apochromatic are the best for photography; if these are too dear, Reichert's lenses usually photograph well, and are cheap.—J. G. P. VEREKER.

5755. **Black Varnish.** — I should recommend "Black Art" to use a mixture of very fine lamp-black and gold size. He can mix it to any consistency he finds most satisfactory.—R. A. R. BENNETT.

5757. **Bournemouth.**—There is plenty to photograph in Bournemouth and the neighbourhood. The pleasure gardens are well worth half a dozen plates or more. There is Branksome Chine, too, which should not be missed. The shore and steamers will also keep you occupied for a considerable time, and in the neighbourhood there is Christchurch Priory, which is five miles, also Wimborne Minster, ten miles. I should certainly advise "Banty" to bring his camera. Plates can be had here of Mr. W. Jones, chemist, 203, Old Christchurch Road. You might also read the articles which have appeared in the AMATEUR PHOTOGRAPHER for Aug. 2nd and 9th, 1889, and Sept. 5th, 1890. These can be had for 3d. each of the Publishers. If "Banty" cares to communicate with me, I shall be pleased to give him any further information (address with Editor).—FOLIAGE.

5758. **Washing Prints.**—If "Anxious Beginner" brought in a couple of pailfuls of water, he could wash the prints for toning with one pailful, and the same water would do for the first washings after the fixing bath, then put them in a dish with some clean water and leave them there five minutes, remove them to a second dish of water, carefully pressing the contaminated water out of them with a roller squeegee, do this a few times and leave them all night in the bath; a short repetition of the same process in the morning will probably leave them free from hypo-sulphite of soda.—J. G. P. VEREKER.

5758. **Washing Prints.**—I do not wonder that you find your present method a little too much of a good thing. Were I similarly situated, the following would be my method: First wash the prints for an hour in changes of water, re-filling the vessel after emptying it, every quarter of an hour; then get a good strong bit of plate glass and another vessel, which fill with water. Take each print separately out of vessel No. 1, squeegee it face downwards on to the glass with a glass roller, wash well, pull it off, and transfer to vessel No. 2. At the end of about a quarter of an hour squeegee them on again and transfer to vessel No. 1, previously re-filled with fresh water. All the hypo ought to be gone now, and you can dry the prints after emptying and refilling once or twice more.—R. A. R. BENNETT.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING*'s post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

IDEA.—This sounds good, and would cost so little to make that it is worth trying. If successful it would be a big thing.

PERPLEX.—(1) The rates of postage per parcel post to Algeria are rather heavy—under 3lb, 1s. 9d., not exceeding 7lbs, 2s. 2d. You would thus be able to have 2 doz. quarter-plates or 1 doz. half-plates only sent for 1s. 9d. or 5 doz. quarter-plates and 2 doz. half-plates for 2s. 2d. Your better plan would be to write to the plate-makers and get them to let you know the cheapest and best method of sending the plates out to you, as per steamer the cost would come considerably less. (2) The firms you name are perfectly reliable, and the lenses may be relied upon for being genuine, and probably they would let you have a lens on approval if you deposited the money with us. Always pleased to help you.

J. PROSSER.—Both your prints are most fearfully over-printed, otherwise they are very creditable, considering what a short time you have been working. Let us see some more work presently, and do not print so deeply.

G. BRITTAIN.—Dark-rooms are available at J. Brookes', 15, Flowergate, John Frank, 9, Bridge Street, W. W. Herbert, Dotchen's Yard, Baxtergate, and F. H. Bowere, Skinner Street. You cannot do better than stick to the plates you have been using; there are none more rapid, and our experience has been satisfactory with them.

J. E.—(1) The tree branches on the left are bad, and the fence is offensive. (2) Utterly without interest, and the railing is again very bad. (3) Good, up to competition standard. (4) Too patchy, and the lights too scattered, considerably under-exposed figures in too dark a shadow. (5) Better, but the figures are too evidently posed; the child should have been playing about, picking flowers, etc. Technically the prints are up to standard, artistically below.

S. R. P.—(1) We shall probably have an article on this subject shortly. A black background, and a vignette attachment in the camera is used, we believe. (2) The articles are not a reprint, although extracts may be utilised here and there. (3) The adapter is perfectly reliable and useful.

H. A. SALWEY.—We cannot unfortunately institute a series of comparative exposures. The table of speeds we shall hope to publish next week.

TED.—(1) Development should be continued till the image "fades away" and the whole surface of the plate is black. (2) The duration of development should not exceed 5 or 7 min. at most.

W. THOMSON.—If you use plenty of clearing solution you could take the paper out into the light without fear, but if instead of using the ordinary fixing bath you will use the acid fixing bath, there will be no need of the clearing solution, so that you can fix at once and thus obviate the trouble of washing. By all means begin with a slow paper.

F. HILL.—There has never been any book published on this subject. Coat the back of your negative with matt varnish and make your solution of dye rather thick with gum water, then paint on with a brush. Some workers, on the other hand, first coat the film with collodion, then varnish thickly and paint on the varnish with dye. It is merely a matter of practice. Always glad to help you.

T. C. MILLER.—(1) Practically you may consider that the increase of focal length will require four times the exposure of the two combinations, actually about 3⅓ times. In bright sunlight on an open landscape, the exposure should not exceed about ½ sec. with *f*/22. (2) Ordinary drawing paper would answer, and would hardly require sizing, but a solution of 10 gr. of gelatine in water well brushed over it ought to be sufficient, or you may float the paper on gelatine solution for 5 minutes.

BOTANY BAY.—(1) If you measure the height of the room and focus an object at that distance you could rely upon its being sharp if stopped down well. (2) A wide angle would be a necessity to take in the whole of the ceiling. (3) The rule you want is this:—

Let D = the distance of object.
f = the focus of lens.
then $\frac{D - f}{f} = \frac{f}{x}$

or as $D - f : f :: f : x$

Or as the distance of the object (measured from a point one focal length in front of the centre of the lens) is to the equivalent focus, so is the equivalent focus to the extra focal length required. Suppose the height of room to be 12 ft. the camera will take up 1 ft—then

$$132 - 8 = 124$$
$$\therefore \text{As } 124 : 8 :: 8 : x$$
$$\therefore x = \frac{16}{31} = \tfrac{1}{2} \text{ in.}$$

Your lens will then require racking out ½ in. more than the focal length to get ceiling sharp.

W. J. BARTON.—(1) Probably if you got in the shadow of anything, the plates would not be fogged, and even in bright moonlight the light is so non-actinic as to be harmless. (2) The XXXXX. plates are quite rapid enough for hand-camera work.

A. E. W.—You would find an R.R. of 5 or 5½ in. focus the most suitable. Whilst it is not necessary to always use *f*/8, it is certainly an advantage to have the extra aperture in reserve.

R. GORDON.—Your letter received; we have written to the firm named on the subject.

A. TAYLOR.—The new agents cannot yet be obtained in England. We have written to the maker, J. Hauff, Feuerbach, Wurtemberg, for samples. The price is about 2s. 6d. per oz.

E. H. GILBERT.—If you mix your spotting colour with fairly strong gum water, it will dry bright, and not show. Some operators spot before burnishing, others only after mounting, which we prefer. To take clouds the best plates are undoubtedly Isochromatic, and a yellow screen should be used, stop down to about *f*/22, and 1-10th or 1-4th of a second is enough. Do not develop up too much, but keep the negatives rather thin.

A. F.—(1) This is printed too deep, the clouds are far too dark. (2) Very fair. (3) Ditto. (4) Ditto, the Isochromatic plates are the best for this work, but require also a yellow screen; we think you are at fault in developing, you want to use a small quantity of reducing agent, pyro, etc., only, so as to keep the negatives thin and soft. The lamp you ask about is

Schirm's, a German one, but we have now the Todd-Forret, far more powerful, the Kolm, and also the Platinotype Company's; all these are fully equal to the German one.

ARTIUM MAGISTER.—Tylar's Window Flind shutter.

A. J. T.—(1) Under-developed, camera not straight. (2) Under-developed. (3) Ditto (4) Camera not straight, under-developed. (5) Better. (6) Much under-developed. (7) Good, but too much foreground. (8) Under-developed. (9) This shows marks of unequal development. All your negatives are far too hard and black and white. You would have softer results if you add 30 gr. of eikonogen to the 20 oz. of No. 1 solution and nee rather less No. 1 and more water. In ll cases you want to develop longer.

W. A. MCCUTCHAN.—Obtain some ordinary black varnish from any dealer, as used for ferrotype work, and try this. Prints will be sent back, we hope, next week. Entry form sent on.

KALLITYPE.—No. 1 is considerably over-exposed, and fogged in developing. The yellowness on the plate ie due to pyro stain, and the little metallic spot due to some dirt or impurity in the developer. No. 2 plate: there is absolutely no image on this plate, and we can only suggest that you either did not pull out the shutter of dark-slide, or else the light was not bright enough to affect the plate at all. The paper you name is one likely to suit a beginner, but, like everything elee, it wants a little practice. Do you want negatives back? li so, send on stamps.

H. J. BRISTOW DAVIS.—(1) Flat, poor, and over-toned. (2) Better, but not up to the mark. (3) Decidedly letter, but over-toned. (4) Very good, but would have been improved if rather more had been taken in, or if taken the other way of plate. (5) Good, but here a little sky would have been an improvement. (6) See remarks to No. 4. Nos. 4, 5, and 6 are up to the standard, and far superior work to 1, 2, and 3, which one can hardly credit are by the same worker. Do you want prints back?

PLATES.—We cannot find your plates, as you say you sent two half plates, whereas we only have three very thin half plate negatives, about which we have no letter.

VERNON.—The enlargement ie over-exposed, and has a very unpleasant brown image. The cutting off of corners also is not pleasing. What developer are you ueing? Try ferrous oxalate, reduce the exposure slightly, and try for a black tone.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** (*A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word: compound words count as* **two** *words.*)

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

Cameras, etc.—Lancaster's quarter-plate Le Merveilleux, with chemicals, complete, bargain, 22s.—Mapleston, 95, Lordship Road, Stoke Newington, London, N.

Lancaster's 12 by 10 Multum-in-Parvo camera, scarcely used, and three 12 by 10 porcelain dishes, price 25s.—P. Williams, 16, Mirabel Road, Fulham, S.W.

Lancaster's half-plate bellows camera, square, one double back, rising front, swing back, good condition, cost 50s., take 30s., bargain.—Hennis, 40, North Street, Colchester.

Half plate camera, square, with reversing back, all movements, three double backs, carriers for quarter-plates, quite new, £3 10s.—S., 5, Park Road, Crouch End, N.

Cameras, Lenses, etc.—5 by 4 Box camera with lens, *f*/3, and superior double back for 35s., or exchange half R.R. lens; no reasonable offer refused. J. Higginbotham, 16, Gough Street, Gray's Inn Road, W.C.

Dark Slides, etc.—Dark slides: six half good Instantographs, 6s. 6d. each; sent for approval.—Adams, Harold Wood, Essex.

Hand-Cameras, etc.—Presto camera, nearly new, three slides, ruby lamp, printing frame, in box with instructions, 6s. 6d., worth 12s. 6d.—Crane, Melrose Villas, Church End, Finchley, N.

What offers? Beck's quarter-plate hand-camera, as good as new, with six double backs.—H., 21, Kidbrook Park Road, Blackheath.

Hand-camera, Houghton's Automatic, in good condition and excellent working order, rapid rectilinear lens, Thornton-Pickard shutter, carries 12 quarter-plates, instrument has done good work, price £5.—J. B. Hartnes s.2 Royal Promenade, Clifton, Bristol.

Stereoscopic Company's Dispatch hand-camera, Newman's shutter, six double backs, cost £12 15s., equal now, price £6 10s.—B., 13, Canterbury Road, Brixton, S.W.

Optimus Ubique hand camera, 5 by 4 R.R lens three double backs, view-finder, new this season, will take 57s. 6d.—102, Shaftesbury Road, N.

Lantern Slides.—Amateur wishes to exchange original lantern slides for others; paper proofs sent.—G., 38, Marchmont Street, London, W.C.

Lenses, etc.—Half-plate rectilinear, iris diaphragms, Black Band, 18s.; 7 by 5 R R., movable hood, Waterhouse stops, finest quality, 21s.—L., 8, Kenilworth Road, Willesden Lane, London.

One Ross' rapid symmetrical lens, 6 in. focus, Waterhouse diaphragms, cost £4 5s., price £2 10s.—Howard, 49, Pier Road, Erith.

Lancaster's Instantograph lens and shutter, half-plate, equal to new, price 20s.—C., 10, Moss Lane, Leyland, Lancashire.

Taylor, Hobson's 8½ by 6½ rapid rectilinear, iris diaphragm, perfectly new, £3 10s.; Newman's shutter, whole-plate or 8 by 5, 12s. 6d.—Field, Montana, Blackheath, S.E.

Negatives.—Fifty instantaneous quarter-plate negatives, views of London, suitable for making lantern slides, price 1s. each; specimen and list, 1s. 3d.—J. Stabb, 154, Queen's Road, Bayswater.

Sets.—Lancaster's half plate patent camera, two double backs, Ashford's tripod, with excellent R R. lens and diapbragms, cost £7 10s., will exchange for quarter-plate and £3 cash; also No. 1 Kodak, with part film, cost £5 5s., sell for £2 15s.—Whitham, Fern Mount, Whalley Range, Padiham, Lancashire.

For sale, whole-plate camera, long extension, three dark slides, R.R. lens, and portrait lens with patent shutter, all in a leather bag, quite new, cost £18, will accept £12.—Write, Works, 63, Gayford Road, Shepherd's Bush, London.

Thornton-Pickard Ruby whole-plate camera, in perfect condition, with three double backs, and Thornton shutter fixed to front, turntable, and specially made tripod, Wray's 9 by 7 rectilinear, quite new, with iris diaphragm and strong canvas case, also whole-plate dishes, washing trough, large gas lamp, and six sheets Ilford paper, plates, chemicals, etc.; giving up photography; cost over £22, sell for £13.—Ponting, jun., Park Road, Southport.

For sale, a half-plate set by Marion, comprising camera with latest improvements, two extra fronts, three double slides, good three fold tripod, Optimus 7 by 5 R.R. lens, enclosed in solid leather case, 90s.; a Ross whole-plate portrait lens, with stops, price £7 10s.; Marion's cabinet portrait lens, 23s.; would exchange Ross or half-plate set for enlarging lantern.—Berry, 2, Ramilies Street, Great Marlborough Street.

WANTED.

Dark-room.—Wanted, Davenport's Eveready dark-room, cheap for cash.—Aston, Princip Street, Birmingham.

Hand-Cameras, etc.—Wanted, a good hand-camera, also Thornton-Pickard shutter for 1⅞ in. hood.—Crampton, 6, Rocky Lane, Nechells, Birmingham.

Wanted at once, good hand-camera, lantern size, automatic changer; particulars and lowest price.—Smith, High Street, Morley.

Sets.—First-class half or full plate set, Ross, Stanley, or British make preferred, must be in good condition and moderate price.—H. Springfield, Strathaven, Lanarkshire.

Tripod.—Wanted, Kodak walking-stick stand; approval.—A. Huddart, Eskdale, *via* Carnforth.

Bargains in Lenses.—For sale, 15 by 12 Optimus wide-angle symmetrical, rotating stops, 10 in. focus, as new, take £4 15s., cost £9, cheap; 12 by 10 European Triplet, by J. Levi, No. 4 B, a really grand article, suit either professional or amateur for copying and other purposes, quite new, cost £9, take 70s; Ross 10 by 8 wide-angle rectilinear, rotating, fine definition, with flap shutter, £3 10s; 8 by 5 wide-angle lens, fitted rotating stops, *f*/16, rapid rectilinear, best condition, take 27s.; Ross' whole-plate rapid symmetrical, Waterhouse stops, works *f*/8, £4 12s. 6d.; whole-plate rapid landscape lens by Tench (this is really same as Dallmeyer No. 3), rotating stops, grand definition, works *f*/16, will cover 10 by 8, quite new, take 60s., cost more than double; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; whole-plate Suter No. 3, landscape rotating stops, about 12 in. focus, quite new, 37s. 6d., lowest; half-plate Dallmeyer rapid rectilinear, quite new, iris stops, movable hood, £4 17s. 6d.; half-plate wide-angle rectilinear, by Spicer Bros., fitted rotating stops, fine definition, as new, 27s. 6d.; cabinet portrait lens by Cox, rack focussing, Waterhouse stops, finest order, take 25s.; Mayfield's 7 by 5 rapid rectilinear, Waterhouse stops, covers well, 32s. 6d. Wray's landscape, casket lenses, 5 in., 7½ in., and 10 in. focus, iris stops, quite new, £3 17s. 6d.; half-plate Lancaster's Instantograph lens, iris stops and instantaneous shutter, as new, 15s.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Rayment, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

Cameras! Cameras! Cameras! Lenses! Lenses! Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, Corner Leadenhall Street, City (late Goy's Medium).

Bargains in Hand Cameras.—No. 2 Kodak, quite new, fitted 100 films, rapid rectilinear lens, finder, and shutter, in leather case, £5 7s. 6d; Facile, by Fallowfield, rapid rectilinear lens and shutter, carries 12 ¼-plates, as new, £4 5s.; Optimus detective camera, by Perken, Son, and Rayment, Optimus rapid rectilinear lens, carries 6 ¼-plates, covered black leather, take £4 4s.; Adams' and Newman's hand-camera, ¼-plate, Taylor and Hobson's special rapid rectilinear lens, *f*/5, with extra changing box, to carry 24 plates in all, take £7 17s 6d.; Shew's Eclipse hand-camera, half-plate, latest pattern, fitted, rapid rectilinear, lense, rotating stops, four slides, with carriers for either films or plates, the whole fitted in leather, covered carrying case, a real bargain, take £7 10s; half-plate Rover, by Lancaster, quite new, Iris stops, all same shutter finder, leather case, take £3 17s. 6d.; optimus magazine hand-camera, carries twenty-three quarter-plates, fitted Euryscope rapid rectilinear lens, instantaneous roller blind shutter, two finders, as new, take £5 15s.; Lancaster's Omnigraph, covered leather, good lens and shutter, take 17s. 6d.; and another, 15s.; Lu o band-camera, by Robinson, Regent Street, quarter-plate rapid rectilinear lens, time and instantaneous shutter, finder, and leather case, carries 100 films, £4 10s.; No. 1 Kodak, as new, rapid rectilinear lens, instantaneous shutter fitted, 50 films, covered leathor, in case, take 42s.; Adams'e Ideal, covered leathcr, new few weeke since, very latest pattern, rapid rectilinear lens, carries twelve quarter-plates, two findere, etc., £5 17s. 6d.; Griffiths' ¼-plate magazine hand-camera, carries twelve plates, changing bag, good lens, finder, etc., 22s. 6d.; Samuel's quarter-plate hand-camera for twelve plates, quito new, rapid rectilinear lens, two finders, 32s. 6d.; Ariel band-camera, Shew's eclipse pattern, leather bellows, quarter-plate, rapid rectilinear lens, rotating stops, Kershaw shutter, three patent Turnbull slides, quite new, take 57s. 6d. All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

Bargains in Cameras and Sets.—Optimus whole-plate camera, leather bellows, reversing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterhouse stops, Thornton-Pickard shutter, three double dark slides, three-fold stand and case, £11 5s.; whole-plate Underwood instanto, wide-angle movement, leather bellows, double extension, rapid rectilinear lene, iris stops, fine definition, double slide half-plate carrier and folding stand, as new, take £5 15s.; half-plate Hare camera, wide-angle, double extension, square leather bellows, all latest improvements, fitted Optimus rapid rectilinear lens, Hare's patent automatic changing box, carries 24 plates, three-fold stand, bayonet joins, solid leather case, and time and instantaneous shutter, grand lot, brand new, cost £18 18s, take £10 10s.; Lancaster's ½-plate special patent camera, brass bound, square leather bellows, two double slides, Lancaster's lens, shutter folding stand and case, take £4 4s.; ½-plate 1891 Instantograph camera, all latest improvements, Instantograph lens, iris stops, shutter, double slide, folding stand and case, take 72s. 6d., as new. Half-plate Duchess camera, all latest movements, etc., Optimus rapid rectilinear lens, fine definition, Thornton-Pickard shutter (time and instantaneous), two double slides, three-fold stand and case, as new £7 5s. Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; half-plate Underwood's Instanto, warranted as new, reversing back, double slide, rapid rectilinear lens, and folding stand, 75s.; ½-plate special patent brass bound, conical leather bellows, fitted four single slides, really good lens, folding stand and case, lowest 37s. 6d.; ¼-plate Underwood's instanto, finest order, changing box for 12 ¼-plates, good lens, rotating stops, one slide, folding-stand and case, 35s.; 1891 Instantograph camera, lens, shutter, slides, and folding stand, 32s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 408. Vol. XVI.] FRIDAY, JULY 29, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Monday Afternoon "At Home" is discontinued for the present, but will be resumed on Monday the 5th of September.

Our Views.—Photographic Trip to the World's Fair—An Appeal—The "Amateur Photographer's" 1892 Annual — International Photographic Exchange—Hove Camera Club Exhibition—Stockwell Exhibition—A Special Announcement—Notice of Articles on Photographic Chemistry and Home-Made Apparatus.

Leader.—Bromide Paper.

Letter to the Editor.—Hints to Beginners (Novocastriensis)—Blisters (Baron, Fallowfield)—An Irish Trip (Viator)—Industrial Competition (Shirley)—Algeria (Eugene).

Articles.—Elementary Photography (Hodges)—Photographic Procedure (Wall)—Printing in Platinum (Thompstone).

Apparatus.—Merlinia's Hand-Camera—Wagner's Transparent Albumen Colours—The Newman Shutter.

Societies' Meetings.—Ashton-under-Lyne—Brixton and Clapham—Great Yarmouth—Hackney—Haltwhistle—Herefordshire—Leytonstone—North London—North Middlesex—South London—Southsea.

Illustrated Supplement.

Convention Papers.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months, 5s. 6d.	Twelve Months,	10s. 10d.
Postal Union	" " 6s. 6d.	" "	13s. 0d.
Out of Postal Union ..	" " 7s. 9d.	" "	15s. 3d

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 39.—"Sea Pieces or River Scenery." Latest day, August 22nd.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, September 16th.)

The Photographic Convention was this year honoured with the presence of two well-known American workers, Miss Catherine Weed Barnes and Dr. Mitchell, and it has been suggested that a party of English photographers should visit the United States next year in connection with the Chicago Exhibition. Mr. H. Snowden Ward, the editor of the *Practical Photographer*, has been entrusted with the task of making the preliminary arrangements, and he says in an advance slip he has sent us:

"As regards the reception that would be accorded to an extensive party of photographers by their confreres across the water, we think there can be no doubt. Miss Catherine Weed Barnes assures us (unofficially, of course) that the two principal New York societies and the Chicago Camera Club will extend the heartiest of welcomes. Dr. Chas. L. Mitchell speaks with a like confidence on behalf of the influential society of Philadelphia. Mr. John Carbutt, whom we have since seen, assures us that the photographic manufacturers and merchants of the States will in every way aim at being of service to us; and we can personally speak for our brethren of the American photographic press—every one of them.

"It is too early to suggest even an outline scheme of what ought to be and can be done, but we think it should be possible to arrange for a general membership in the American photographic Convention, and so to make the grandest photographic gathering that has ever been held, or that will be possible for many years to come. We want everyone, therefore, who can, or even who may visit the exposition, to send us their names at once, with particulars of the dates, if any, between which their journey must fall, and with any suggestion they can make for the success of the scheme. We would then propose to arrange for a small Executive Committee to be formed in England, for a similar Committee in the States, and for a definite programme to be drawn up as far as possible. As it will be impossible, whatever arrangements we make, to fix a time that will be convenient for every one, we shall see that all possible privileges are extended to individual photographers as well as to the party. And we will undertake that the arrangements shall be duly printed and notified to all."

Such a scheme as this should meet with general support, and would lead, no doubt, to a much greater feeling of unity and brotherhood between our American confreres and ourselves. Mr. Snowden Ward, Memorial Hall, Farringdon Street, E.C., will be glad to give any further information.

We publish in our correspondence columns an appeal from one of our readers in aid of a church fund, and we are sure there are many of our readers who will be glad to assist with prints, etc.

We would again call our readers' attention to the "Holiday Guide" section of our "Annual" just published. This will be found invaluable to all wishing to combine

photography with their holidays, as it not only gives information as to dark-rooms, plates, and chemicals, but also will, in many cases, assist tourists considerably in finding the best bits and best time of day to photograph the same.

IT has long been a question as to what amateurs should do with their negatives. Mr. Hamfeldt, of Helsingfors, Finland, now proposes to establish an International Photographic Exchange, the idea being briefly as follows:—

"If you are a photographer, or are in any way acquainted with this pleasing occupation, you will know that art collections are most valuable and sought after, and that people go long distances to study them, as being the best means of assisting the art-photographer in his work; so that a collection of the kind we propose to assist you in acquiring will, quite apart from the pleasures it will give, be of the greatest use to you.

"What we now invite you to do is to choose one or more of the best negatives you have, have copies—as many as you like—printed from them, and send these to us. In exchange for these you will receive a number of photographs, all different, but of as near as possible the same value, taken by photographers in all parts of the world.

"It is not proposed, however, to confine these advantages to people who practise photography, either for pleasure or for profit, as anybody will be able to obtain a collection in this unique and cheap way, by simply ordering from a professional photographer a number of unmounted prints, which can then be sent to us for exchange.

"Consider the interest of an International Album, and the value and pleasure it will give you. You will have the best photos sent you from every country in the world where this notice circulates; and as everybody will, in his own interest, send the best he can produce, it will be seen that the Exchange will be enabled to send the best photos procurable—in fact, photos that cannot in any other way be obtained. We advise you to commence at once, and follow up our suggestion, by starting your own International Gallery of the pictorial world and current events. It will grow in interest and value."

We shall be pleased to give any further information to our readers, or to place them in communication with the proposer.

THE Hove Camera Club will hold an exhibition of photographs in connection with the Industrial and Horticultural Society, on September 21st and 22nd. The following are the classes and rules:—

OPEN CLASSES (FOR AMATEURS ONLY).

Class P 1, Set of six prints, landscapes, with or without figures; P 2, Set of six prints, marine subjects; P 3, Set of three prints, portrait and figure studies. First prize in each class, silver medal; second, bronze medal; third, certificate—presented by the Industrial and Horticultural Society.

P 4, Set of six lantern slides, landscapes or seascapes, taken within twelve miles of Brighton; P 5, Set of six lantern slides from hand-camera negatives; P 6, Set of six lantern slides, architecture, interior or exterior; P 7, Set of six lantern slides, subjects taken within the parliamentary borough of Brighton, three at least to be public buildings. First prize in each class, bronze medal; second, certificate. The best set in these classes will be awarded a silver instead of a bronze medal. The medals in classes 4, 5, 6, and 7 are presented by Mr. W. A. Hounsom.

HOVE CAMERA CLUB CLASSES.

P 8, Set of three prints, any subject. First prize, silver medal; second, bronze; third, certificate. Open to members of the Hove Camera Club only.

P 9, Set of three prints, any subject. First prize, bronze medal; second, certificate. Open to members of the Hove Camera Club who have practised photography only since January, 1891. Medals presented by the Club.

CONDITIONS.

(1) Exhibits must be the entire work of the exhibitor; exposure, development, retouching, printing, toning and mounting. (2) Photographs may be printed by any process, or on any material, but must not be enlarged, or from an enlarged negative. (3) No picture is eligible for competition which has previously received an award in any open class. (4) Exhibitors may enter more than one set in any class, but cannot take more than one prize in such class. (5) No name must appear on the photographs, but a *nom de plume* must be written on or attached to each frame or mount, which *nom de plume* must also appear with name and address on the entry form. If more than one set be sent in, each set must also be numbered. (6) The judges have power to withhold any award if in their opinion the exhibits are not of sufficient merit. (7) An entrance fee of 6d. for each class exhibited in (except classes 8 and 9) must be sent with entry form, duly filled up, to the Hon. Sec. of the Industrial Society, H. Emery, 142, Church Road, Hove, on or before Saturday, September 17th. (8) Photographs must be delivered at the Town Hall on Tuesday, September 20th, between the hours of 4 and 8 p.m. Lantern slides must be sent to 142, Church Road, by Monday, September 12th, at latest. (9) Exhibits from a distance must be sent, carriage paid, to 142, Church Road, Hove, Brighton, in time to be delivered on the days mentioned in the foregoing condition. (10) The slides will be retained for about seven days for the purpose of a public lantern exhibition.

THE Stockwell Floral and Industrial Exhibition will be held in the National Schools, Lingham Street, on Monday, August 1st, and two following days. There is a small section devoted to photography:—Class I., Set of three contact prints or enlargements; Class II., Two sets of four lantern slides. All exhibits must be delivered at the schools, in Lingham Street, between the hours of three and nine p.m., on Saturday, July 30th, and must be removed between the hours of nine a.m. and one p.m. on Thursday, August 4th. Intending exhibitors must fill in their names and addresses, adding the section and class under which they wish to exhibit on the forms, which may be obtained from the Secretaries, any of the Committee, or the district visitors. One prize will be awarded in each class, but a second prize may be given in any class consisting of more than twelve exhibits. Certificates only will be granted for exhibits in the trade of the exhibitor.

WE wish to draw the attention of our readers to the following announcement:—

In no case will the Proprietors of the AMATEUR PHOTOGRAPHER undertake to buy or sell any goods on commission, nor will they be responsible for the safety of any negatives or prints sent to the Editor of the AMATEUR PHOTOGRAPHER for any purpose whatever, although all reasonable care will be taken of the same.

The Editor claims the right of refusing any print, lantern slide, etc., sent in for competition, without assigning any reason for such refusal.

WE commence next week a series of articles upon "General and Photographic Chemistry," by Mr. E. C. Conrad, F.C.S., which we think will be found useful and instructive. Whilst there is always a great difficulty in making notes on the chemistry of photography interesting to general readers, we think in this case the articles will be found not too abstruse, nor yet devoid of practical interest, as formulæ will be included, and the main idea of the author, who is an analyst and chemist of high attainments, is to make the work practical.

We also commence a series of articles upon "Home-made Apparatus," which, judging from the success of Major Bruno's articles upon his hand-camera, will not be without interest to those of our readers who like to combine amateur carpentry and joinery with photography.

"Sun Pictures."—A very elegant contribution to the literature of illustrated magazines is the first series of "Sun Pictures," printed by Hazell, Watson, and Viney (Ld), and published from the office of the AMATEUR PHOTOGRAPHER. It marks the introduction into England, we believe, of the French method of illustrating letterpress by interspersed collotypes. The editor modestly claims "no merit beyond that of having plagiarised an idea of our French neighbours;" but the merit of his production is manifold, and will be acknowledged not only by photographers, professional or amateur, but by all lovers of the higher class illustrative art. There are two frontispieces in Woodbury-gravure, and thirty-six collotypes. Sixty-one towns through the United Kingdom and on the Continent are illustrated, the tourists themselves supplying the descriptive text. At 3s. 6d. it is cheap enough.—*Evening News and Post.*

APPENDIX TO NOTES ON ENLARGING.

Incandescent Gas.

Since the note on the use of incandescent gas or the Welsbach light for enlarging purposes was written, we have made experiments with the improved form of burner and mantle supplied by the patentees of the Incandescent Gas Light Company, and has found that by the aid of the small blower and carburettor supplied the exposure for enlarging is considerably reduced; thus in enlarging with a 6-inch lens, a half-plate to four diameters, the exposure with an ordinary three-wick lamp was fourteen minutes, whereas with the carburetted air and mantle the exposure was ninety seconds on Eastman's bromide paper, B.

BROMIDE PAPER.

PRINTING BY CONTACT.

Preliminary Considerations, Estimating Exposure, Etc.

To the amateur engaged in business during the day bromide paper forms a ready method for obtaining prints quickly, as from twenty to thirty prints can easily be struck off and completed in an hour, all but the final washing.

Commercial bromide paper is usually issued in three grades—A, smooth surface and thin paper, suitable for mounting, and small prints; B, smooth surface and thick paper, suitable for larger prints and book illustrations; and C, rough surface and thick paper, suitable for enlargements. It is also issued in two degrees of sensitiveness, slow and rapid paper, and thus enables us by suitable modification of the development and exposure to obtain good prints from almost every class of negative.

The standards required for obtaining good prints are (1) a constant source of light, (2) correct exposure, (3) suitable paper, (4) suitable developer, (5) absolute attention to details and absolute cleanliness.

(1) *The Light.*—We may at once dismiss daylight as totally unable to fulfil the requirements of constant value. We must then fall back on artificial light, gas, lamp, candle, match, or magnesium ribbon, and the operator must be guided by the most convenient and the most suitable for his negative.

(2) *Correct Exposure.*—As in all photographic operations where there is an invisible image, correct exposure is a difficult thing to attain without some guide, such as experience or some method or trials. Our own method of estimating exposure when we require to turn out a large number of prints from one negative is to cut a sheet of paper into three or more strips, and selecting any portion of the negative which may be taken as typical of the rest, or in which we want to obtain detail, we expose the first strip, for thin negatives, 5 seconds; the second strip, 7½ seconds; the third strip, 10 seconds; whilst for dense negatives these times are increased to 10 seconds, 15 seconds, and 20 seconds, or even longer, the distance between the source of light and printing frame being twenty-four inches.

Dr. Herklots Vos contributed the following valuable method of estimating exposure for bromide paper, to the Amateur Photographer of November 23rd, 1888:—

"To obtain the best possible print you can from a negative with bromide paper, the exposure in most cases (unless the manipulator be very experienced) is largely arrived at by guess-work. Even the printed instructions supplied with the papers give you little or no help; no more do books; they only generalise vaguely. When once, however, the proper exposure for that negative has been ascertained, and some pieces of paper have been wasted over it, I have no doubt the careful worker makes notes of all the factors by which he arrived at his success, so as to be able not only to reproduce more good prints from that negative, but also to serve as a guide for printing from other negatives of a like density and colour. By my method I can, with the practice I have had, determine correctly enough for good work the exposure for *any* negative right off. I do not say I don't have failures, but they are rare now. All will admit that the factors concerned are so various that it is doubtful if an absolutely correct method will ever be arrived at. I submit my results with all their imperfections for the favourable or adverse criticism of fellow amateurs. If we can get a constant or even fairly constant illuminant, it follows that by experiment we can establish a ratio between it and other illuminants which are also constant, and so knowing the exposure for any given negative with our standard illuminant, we can produce from that negative either bromide prints or lantern slides, enlargements, opals, and so on, working either by gaslight, daylight, electric or lime light, etc. We must, of course, take into account also the varying speed of the emulsion of the different papers, lantern plates, etc., and these are all ascertainable by experiment. To obtain, then, a primary standard of exposure to work from is the desideratum, and I will proceed to the lines on which I have worked to arrive at this end.

"The standards I use are—(1) a No. 5 Bray burner (burner tipped with white material, cost 1d.) at its fullest power of illumination, viz., full pressure at the meter and the tap of the burner turned down just sufficiently to avoid flaring. (2) Eastman's bromide paper, A, B, and C all being of the same speed (though I see by a report of a meeting of the North London Photographic Society, published in the Amateur Photographer of the 19th October, that Mr. Bellsmith, of the Eastman Company, said that they make their paper in two speeds, and I gather, from his further remarks at that meeting, that what I have always been supplied with as just 'Eastman's bromide paper' was of the slower kind). (3) Iron developer, made up with saturated solution (as usual) of oxalate and iron, both rendered just acid with sulphuric acid (an important and not to be neglected point) in the proportion of one to four (also as usual), and bromide added in the quantity of one-fifth of a grain (two drops of a 10 per cent. solution) to each ounce of developer—which quantity of bromide is quite enough. I will mention modifications of this developer farther on. (4) A fixed distance of exposure to the Bray burner, viz., two feet. (5) A fixed scale of feet and inches, measured from the burner, and at right angles to the plane of the flame. This may be marked out on the floor, or if the burner be fixed near a wall, marked on that wall, or the marks made on a piece of wood, or, best of all, a tape measure, these latter being fixed on a level with the burner.

"In all these instances the fixed scale to be six feet, measured from the burner, and the intervening feet and inches also marked out. (6, and last) A piece of opal glass, purchased as 'flat ground-glass opal plaques for painting on.' Mine was obtained at Reeves's, in Cheapside, cost 8d., and is of the size of a half-plate negative, which I find the most convenient size. The glass is quite smooth and transparent on one side, but the other is ground very fine, and has a layer of white opal on it. It is in the employment of the Bray burner, the scale of six feet, and the opal glass that the specialities of my method exist. If a negative be held up to any gas flame at its fullest, and the negative be not too dense, the details will be seen through it at a distance of many feet, perhaps ten or fifteen feet, but by intervening the opal glass between the negative and the light it will be found that details will now become visible *according to the density of the negative taken in conjunction with the distance at which it is held from the flame.* I have found that the opal glass is the best medium for this. Plain ground glass is too thin, and lets too much light pass through it, but with the opal glass (which is ground on one side, as well as being somewhat dense by means of the opal in it) my object is attained, the details of the negative, too, standing out clearly defined, with the pure white opal as a background. My *modus operandi* is as follows: Place the gelatine surface of the negative you wish to print from on Eastman's bromide paper, in contact with the rough and opal side of the plaque, holding the two just before you in front of the Bray burner, and in such a manner that you will readily ascertain the distance at which you are holding it from the flame. Hold them, say, at 3 or 4 ft. from the burner. Now if the details cannot be seen, approach the light until the details *just become visible*; for example, say in a view, until the markings of a stone or brick wall, or the details of leaves, or what not, are just seen. Then for every inch distance the negative and opal glass are from the six-foot mark, when details become just visible, give one second of exposure to obtain a print on Eastman's bromide paper, the distance at which you must, during exposure, hold the negative (placed in contact with the paper in a printing-frame), being 2 ft. from the Bray burner. Example: Details are just seen at 2 ft. from the 6 ft. mark (that is 4 ft. from the burner); give in this case 24 sec. exposure (there being 24 in. in 2ft.) I have arrived at the 6 ft. scale and the 2 ft. distance for exposure by experiments often repeated. It will be evident that the denser the negative the closer you will have to be to the flame to see its details, and the longer the exposure in consequence, and *vice versa.* If now the negative be a very thin one (and such negatives will give

good bromide, but not good silver prints), details with the opal glass will be seen at a distance of much more than 6 ft. from the flame; in this case the *maximum* exposure is 2 sec. at 2 ft. from the burner as before; and for the other extreme, a very dense negative, or one too much intensified or fogged (all faults in the negative, as also in the case of the very thin one), and you have to go *into* the flame almost to see details, give the whole 72 sec. exposure (72 in. in 6 ft.), but hold the negative at 1½ to 1 ft., instead of at 2 ft., from the burner, in exposing the paper. Some practice will be required to estimate exposure for these faulty over-dense negatives, hence I state 1½ to 1 ft. As to the colour of the negative: if it be a yellow (pyro developed) one, you will have to approach the flame to get details more than if it be a black (iron, or beach, or hydroquinone developed) one. The yellowless actinic colour, therefore, is not of importance. (I would mention, in passing, that under-exposed negatives having large masses of clear glass in them are not suited for bromide printing, nor for silver printing either, for that matter. Negatives with plenty of detail, and I think preferably iron developed, are the best for this work; and an over-exposed negative will give good results, though not if printed in silver). Further: in the case of dense negatives 10 or even 20 sec. exposure in excess of that ascertained by the opal glass will not spoil the picture, and if in any doubt, give this excess. With thin negatives, however, the ascertained exposure should be adhered to strictly, or even lessened, as it is very easy to over-expose a thin negative."

With regard to Dr. Vos's method, we may say that we worked with it for some considerable time, and can therefore testify as to its value from practical experience.

The following suggestions as to the possibility of obtaining good prints from every class of negative must, of course, be taken with a big grain of, not salt, but experience; in fact, with bromide paper as with every other photographic process each operation must be attended to with a liberal admixture of intelligence. Never expect things to do themselves, but do them yourself, guiding them by your hands and brain.

We will assume in the first instance that we have three negatives to print from, the one a weak, thin negative without any contrast, and yielding as a rule flat, foggy results on other papers; what are we to do to obtain good bromide prints? Choose a paper and method of exposure which will increase contrast, select a slow brand of paper (for various tested speeds of bromide paper, see p. 337, vol. xv.), place it in contact with the negative, and having estimated the exposure, we will say by Dr. Vos's method, and found it to be about five seconds at two feet from the gas burner, remove the printing frame to a distance of four feet, and calculating the increased exposure necessary (see p. 337), which will be twenty seconds at the greater distance, cut the exposure rather short and give only seventeen to eighteen seconds, and then modify the developer as given in the next chapter.

Our next negative is an ordinary negative with good gradation, yielding good prints with suitable treatment on any paper; then choose any but a rapid paper, or even this if we decide that a slight lessening of contrast will be an improvement, and give it a normal exposure at the normal distance, and a normal developer.

The third negative is one full of harsh contrasts which nothing will subdue; then choose a rapid paper, and give a a full exposure at the normal distance, and modify the developer as described in the next chapter. Where sharply defined masses of dense deposit occur in a negative, our practice is to use an ordinary wax vesta, and, igniting this, to pass it evenly and regularly all over the negative at about half an inch from it, and then to move the lighted match to and fro over the very dense parts, thus giving them more exposure than the thin parts. Working thus we have found we can obtain far more harmonious results than by the ordinary method of exposure, and an ordinary wax vesta is quite sufficient to expose a half-plate print in this manner, and then there will be a little piece to spare, but the whole match is required for a whole-plate, using it as close as possible. Where extreme contrasts exist, it may even be advisable to use a more powerful light of greater penetrative power such as magnesium ribbon, about one inch being the requisite quantity for a normal negative, moved to and fro at a distance of three inches from the glass.

Letters to the Editor.

HINTS TO BEGINNERS.

Sir,—I regret that I have not been able to reply to Mr. Forret's letter in time for your issue of last week. All said and done, what Mr. Forret has convicted me of is principally an inaccuracy, or rather a want of lucidity, in expression. I do not for one moment wish to minimise my error, as that very want of lucidity might lead others astray, and I am obliged to Mr. Forret for pointing it out, and moreover for saying that, as regards hypo, an unequal saturation (if this is the correct term) is practically of no importance in photography. Still, the point I wished to insist on remains, namely, the advantage of filtering the fixing solution for negatives, as hypo as received from the dealers often contains insoluble foreign matter, which does no good, if it does no harm, to negatives. As regards the gold solution referred to, being no chemist, I was obliged to accept the dealer's explanation; all I know is that the last 2 drm. in the bottle of the gold solution apparently contained more than 2 gr. of chloride of gold, as my prints were spoilt by rapid and over-toning. Since I have given the bottle a shake before using this has not recurred. As to the acidity of the borax solution, I can only go by the litmus paper, which has turned red more than once. The slow action I referred to was in the use of the stock solution *not strengthened with fresh gold*; and I think if Mr. Forret will experiment with his stock solutions he will find that if a print is left about half an hour in an old solution, it will acquire a very decent tone, unless, perchance, the gold has been worked out to the last trace. My remarks in the article would have been more lucid had I used the words, "without the addition of fresh gold." My method of compounding the toning bath is simply a matter of convenience. My advocacy of hot water was to hasten solution. Having but little time to devote to my favourite pastime, I cannot be everlastingly stirring, and shaking, and waiting for the salt to dissolve in cold water; nor have I the time to prepare my fixing bath for prints beforehand. Hot water saves time where the chemicals are required in solution quickly. I once made a toning bath with cold water with the finest powdered borax obtainable, and I was never so tired of anything in my life, it was so slow in dissolving. The hint about ferrous sulphate is good; I was not aware of its decomposing under the action of hot water, but I always, it so happens, make my solutions of this drug with cold water.

To conclude, I wish that more of your readers would follow Mr. Forret's example, and criticise articles, letters, and answers to correspondents in the manner he has criticised my little article. I have often noticed statements and formulæ in your paper which have appeared to me to be inaccurate, and which I have wished to enquire into, but that I have so little time at my disposal.

Thanking you for the space you have so kindly accorded to this discussion, I remain, etc., Novocastriensis.

* * * *

BLISTERS.

Sir,—As many complex suggestions have been put forward on this subject, will some of your readers try the following?

Take no notice whatever of blisters appearing, but when the prints are finished washing, lay them one by one face downwards on a piece of glass about an inch larger all round than the biggest size, and slightly overlapping each other in different directions. Then take a clean soft towel and press out the bulk of the water, after which put half a dozen sheets of blotting paper on and gently roll them, withdrawing the bottom wet sheet each time. Apply the mountant after all moisture is apparently removed, and, having placed the print in its position on the mount, roll again, and let them lie all night and next day if possible under a heavy weight.

I can show dozens of prints which were very badly blistered while washing, and in which it is impossible to find a trace of these unwelcome intruders. The Baron.

SIR,—As my Premier sensitised paper has several times been referred to in this correspondence, kindly allow me to explain that when supplied in full sheets it has always been entirely free from liability to blister and from offensive smell, but when ordered in cut-up sizes, I have hitherto for convenience sake supplied a well-known commercial brand of paper. However, I have now arranged to cut up and pack my own Premier sensitized paper in all sizes, so that in future this will be as free from blisters as the full sheets have always been. —Yours, etc.,

JONATHAN FALLOWFIELD.

* * * *

AN IRISH TRIP.

SIR,—If there are any photographers wandering about the north of Ireland they would do well to pay Portsalon a visit if they want a comfortable hotel, good air, good bathing, mountainous scenery, and good golf links. Portsalon is on Lough Swilly, and is reached from Londonderry by taking train at 11 a.m. to Fahan and steamer, every Tuesday and Friday. A pleasant sail up Lough Swilly brings them to Portsalon. There are some remarkably fine natural arches in the cliffs here, made by the action of the sea. Golfers will find splendid links of eighteen holes, three miles in length over a most varied course by the sea, which seems as if it was formed by nature purposely.

VIATOR.

* * * *

INDUSTRIAL COMPETITION, NEW SWINDON.

SIR,—Having got together a good sum towards building some much needed Sunday schools, but still a little more required before we can start, we are getting up competitions in various things, including photography, for small prizes, the articles to be afterwards sold. Doubtless there are among your many readers many who have good plates of notable places or views from whom I would ask for a few prints, mounted preferred, either for or not for competition. A gentleman who is an entire stranger to us has consented to act as judge. Entries close August 17th. I will gladly give any further information to any who will kindly help us in either way.—Yours, etc., A. SHIRLEY.

77, Westcott, New Swindon, Wilts.

INDUSTRIAL COMPETITION, IN AID OF THE BUILDING FUND OF S. MARK'S SUNDAY SCHOOLS, NEW SWINDON.

Entrance free. £10 in prizes.

Competitors are asked to make any article or articles they choose, and give them to be sold in aid of the above object.

Prizes will be given to the makers of the best articles in the various classes (should there be in any one class or division ten or more competitors under the age of sixteen years, they will form a junior class, in which an additional prize of 10s. will be given.) Should there not be ten competitors in any one division, the prize will be reduced to 10s.

CLASS IV., PHOTOGRAPHY.—Secretary, Mr. A. Shirley, 77, Westcott Place, New Swindon. Prize, £1, and 10s. given by the judge.

All articles must be sent (the name and address of the maker legibly written and attached to each article) to the secretary of the class or division to which they belong; or direct to Miss Swinhoe, Park House, New Swindon, on or before Wednesday, August 17th, 1892.

* * * *

ALGERIA.

SIR,—I see by the last number of the AMATEUR PHOTOGRAPHER that you ask for short notices about places of photographic interest. I wish the following may prove useful.

The place I should like to mention is "Bone" (Eastern Algeria). It is a town of some thirty thousand inhabitants, a fair proportion of which are Arabs and Moorish Jews. The neighbouring country is as picturesque as possible, combining forest, plain, mountain, and sea-coast scenery at once. Tolerably good roads radiate in every direction, and the Bone-Guelma railway reaches hence to Tunis on one side, and Constantine on the other. One may even have a trip to the Biskra Oasis and the Sahara, *via* Bone. Lines of steamers go all round the coast on each side, stopping two or even three times per day at small but interesting towns.

The light is splendid, at least during the spring, summer, and autumn months. Clouds may be mentioned as very scarce. Hand-camera work is rather easy here, as far as I may judge.

Isochromatic plates should be secured before starting, to be able to take some of the people's variegated dresses.

No monuments to speak of, excepting some little Mohammedan *Koubbas*, with their round white domes of dazzling brilliancy. But those are rather difficult to get, owing to the greenness of surroundings. The Eolough mountain will yield many a charming plate to the "alpiniste" photographer.

There is only one drawback. From the first of July Bone may be considered as a very warm place; and when sirocco is blowing the heat is intense. The best time to pass here would be the second half of May and the first of June.

Three lines of steamers, one of which is the Transatlantique, reach Bone from Marseilles. There is a departure almost every day in the week. The Monday boat stops for some hours at Ajaccio (Corsica).—I am, etc., EUGENE.

Elementary Photography.

BY JOHN A. HODGES.

CHAPTER XXVI.—(CONCLUSION.)

IN the foregoing chapters I have endeavoured, as concisely as possible, but without omitting anything which would be useful to the beginner, to describe the actual procedure necessary to successfully carry out the various processes in ordinary use for the production of photographs at the present time. Much more, no doubt, could be usefully written on some of the topics dealt with, but I have endeavoured to deal with each branch of the subject in such a simple manner as to enable the youngest or most ignorant reader of the AMATEUR PHOTOGRAPHER to obtain an intelligent grasp of it, and I have from time to time given references to authorities, so that the reader may, if he so desires, further extend his knowledge.

There is a mass of literature upon the subject, but much of it will be of little practical value to the student; he must therefore learn to discriminate between the wheat and the chaff. In particular much that is profitless has been written upon the artistic possibilities of photography, and the reader who seeks merely for instruction will find all that he will require, from a photographic point of view, in the works of H. P. Robinson, on the subject, who, besides being a photographer, is a painter of no mean ability.

Turning to the technical aspect of photography, the writings of Captain Abney deal most exhaustively and completely with the whole subject, and I have to acknowledge my indebtedness to them. To "Photography with Emulsions" I have already referred; his "Instruction in Photography" and "Treatise on Photography" should also be studied. The chemistry of the subject should not be neglected, and Hardwick's "Photographic Chemistry" and J. T. Taylor's "Photographic Chemistry" should both be procured. The latter author has also recently written a most valuable work upon "Photographic Optics." As a book of reference E. J. Wall's "Dictionary" will be found extremely useful, and the same writer's "Photographic Procedure," now appearing in these columns, bids fair, from the exhaustive manner in which it deals with each topic, to be even more so. A knowledge of the history of photography will be gleaned from a little book by Mr. Werge, entitled "The Evolution of Photography." The foregoing books may justly be termed standard works upon photography, and would form the nucleus of a good reference library. Improvements have taken place in photographic methods during the last few years by leaps and bounds, but although it is hazardous to attempt to prophesy as to the rate of future progress, yet it would appear that for some time to come further advancement will proceed more slowly than in the past. Improvements in processes and in methods, however, continue to be made, and in order that these may be intelligently followed it becomes necessary to read the current literature upon the subject. Therefore the beginner will derive the greatest

possible benefit by becoming a subscriber to one of the weekly papers devoted to photography. Of the four or five of these which are now published, the AMATEUR PHOTOGRAPHER is perhaps most suited to the particular requirements of the amateur; it is, in fact, the only paper which is exclusively an amateur organ, though its pages are by no means shut to the professional, some of whom, bearing honoured names in photographic journalism, being constant contributors to it.

I have endeavoured throughout to treat every subject upon which I have written in the most elementary manner possible, using language as free from technicality as I could command, and the system has been similar to that which I should have adopted had I been imparting the information orally. The instruction has been progressive, therefore I would urge upon the beginner to first read the book from cover to cover, and then, commencing at the beginning, follow the procedure laid down to the letter, and chapter by chapter, in their proper sequence. The principle which I have endeavoured to follow in imparting the information which I was seeking to convey, was to give one well-tried and successful method of working, and one only. In photography, as in other things, there are more ways than one of arriving at the same result, but ringing the changes on developers, plates, and processes is the worst possible course which can be adopted. Modesty, I am aware, is a very essential qualification for an author, but I may be permitted to say that every process and mode of treatment of plate or paper mentioned in these pages has been practically tested and found not wanting by the writer during a photographic experience now running rapidly, alas! into two decades.

Although, the introduction of the gelatine process has made successful photography far easier of attainment than in the days of collodion, yet the reader will at times meet with disappointment and non-success. When it is remembered that the same thing not unfrequently happens to even the most experienced, it will be understood that something more than the mere "pressing of the button" is required on the part of the learner, if he is determined from the beginning to himself do the rest rather than depute it to others. Let him not, therefore, be discouraged by failures, but begin again from the commencement, and endeavour to trace the cause of the trouble to its source. Failures, if regarded intelligently, are helpful rather than retrogressive, and may even be regarded as stepping stones to advancement and invention.

If near the headquarters of a photographic society, become a member of it. Even though it be a small affair, and its members not more experienced than yourself, you must be the gainer, rather than a loser, by your intercourse and exchange of ideas with them. Always remember when real difficulty occurs, the surmounting of which seems impossible, that a plain statement of the facts addressed to the Editor of a photographic paper will always meet with kindly and officient attention. In regard to the practical utility of the query column, I am extremely dubious, for the questions are sometimes replied to by those whom the answers given stamp as being unqualified to convey the information sought for. Indeed, one may sometimes see queries of quite an elementary nature, under the same initials or *nom de plume* as those appended to answers to questions previously put.

In conclusion let me again remind the reader that there is no royal road to success in photography, he must learn to walk before he can run, but if that which I have written proves of assistance in guiding his footsteps, my object in writing will have been fulfilled.

Apparatus.

MERLINI'S HAND CAMERA.

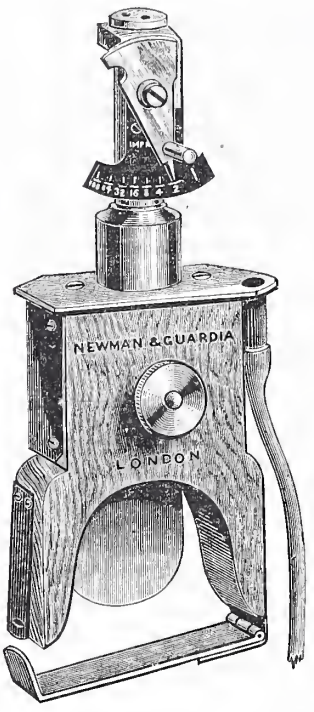
P. MERLINI, of 34, Red Lion Street, Clerkenwell, E.C., has shown us a very neat and convenient hand-camera he is just placing on the market.

It takes the usual box form, and measures 10½ by 7 by 5¾ inches, and is made of ebonised wood. It is fitted with three mahogany double dark slides of the solid type, a rapid rectilinear working at *f*/8, and a Thornton-Pickard shutter.

To a great extent it carries out Major Bruno's ideas, although actually it was made some time before his articles appeared. It possesses a rising and cross front, a swing back and focussing screen, and a focussing indicator. It is practically an ordinary camera, and may be used on a stand in the ordinary way, and yet forms an efficient hand-camera.

The maker offers the three double backs or twelve single slides, the camera, shutter, and lens at the reasonable price of £4 10s, and at this price it should find many friends. It is a well-made, capable instrument and its uses are practically universal.

WAGNER'S TRANSPARENT ALBUMEN COLOURS.



Mr. C. A. Rudowsky, of 3, Guildhall Chambers, Basinghall Street, E.C., is introducing the above colours for tinting photographs. They are all liquid colours, ready for use, and work satisfactorily on any surface and dry with a gloss, and are perfectly transparent.

Permanent albumen water-colours and albumen spotting colours are also offered by the above and should be found useful not only for prints, but also for lantern slides and transparencies.

THE NEWMAN SHUTTER.

Messrs. Newman and Guardia, of 71, Farringdon Road, E.C., have introduced an improved form of this well-known shutter, which is now much neater in appearance, lighter, and the working parts are counterbalanced. This shutter has long been a favourite, and we have found it a very useful and reliable instrument.

The following is the list of speeds and prices, etc., of the new shutter.

Size.	Aperture up to inches.	Improved Form.	
		Speed: Seconds.	Price each.
¼ to ½ pl.	1⅛	1 to 1/100	32/6
1/1 „	1⅜	2 „ 1/64	35/-
9 × 7	1½	2 „ 1/64	37/6
10 × 8	1¾	2 „ 1/32	40/-
12 × 10	2	2 „ 1/32	45/-

Complete with ball and tube, *f*/11 stop and fittings.

THE photograph of lightning reproduced in our last number was taken by Mr. William Rice, not E. Rice, as stated.

DEWSBURY AM. PHOT. ASSOC.—The Hon. Secretary, Mr. George Kilburn, requests us to notify his change of address, which is now Ravensley Street, Leeds Road, Dewsbury.

ILLUSTRATED SUPPLEMENT,

Monthly Competition, No. 37, "Portraiture and Figure Study."

CLASS I.

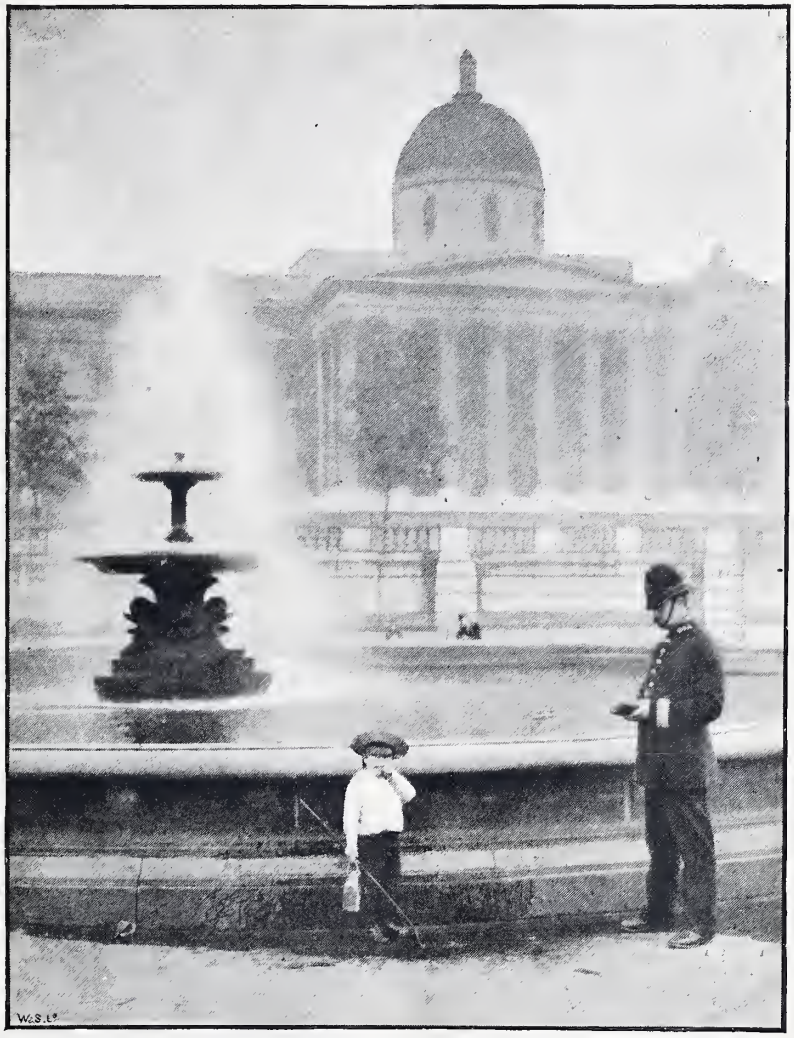
1. GEAR, J. H. (London).—"Fishing in Preserved Waters." Taylor and Hobson, *f*/16; 1 sec., June, sun through light clouds, 7.15 a.m. This is a very carefully thought out and happy study. The competitor informs us that he had to obtain permission from the Commissioner of Police to photograph in Trafalgar Square, and that the gentleman in blue was asked to kindly take the little culprit's name and address, and the boy, the competitor's nephew, was told to "cry hard." The result fully justifies the care expended, and deservedly takes the Silver Medal. A 12 by 10 platinum print.

2. EVANS, J. W. (Wolverhampton). —"A Bit of News." *F*/32; about 6 sec. October, rather bright, 12 o'clock. This competitor has long been in the front rank, and we congratulate him on winning the Bronze Medal. A whole-plate, plain-paper print of very pleasing tone.

3. PENNINGTON, R. O. (Kendal). —"Dale Folk." Dallmeyer's R. R., *f*/32; 1½ sec., June, sunlight, 2.30. A half-plate platinotype (hot bath) print, which is a little flat; probably the new cold paper would give a better result.

4. BRANTHWAITE, R. W. (Herts).—"After the Dance." Ross' single landscape, *f*/32; 12 sec., May, bright light, 11 a.m. A very pleasing, soft study, probably cut down from 10 by 8 print. It is just a trifle over-printed, but shows very careful work.

5. TIMS, J. (Surrey).—"Happy Childhood." Optimus Euryscope, *f*/32; about 2 sec., May, in shadow, with sun glinting across path, about 10.45; half-plate; hot bath platinotype. Technically a very fine print, of a warm, pleasing tone, and a characteristic bit of "happy childhood."



Silver Medal.] "FISHING IN PRESERVED WATERS." [J. H. GEAR.

[COPYRIGHT.]

6. HERBERT, W. (Cardiff).—"The Morning Bath." Argus R. R., *f*/21; half sec., July, fairly good light, 8.30 a.m.; Ilford ordinary; platinotype, hot bath, sepia; half-plate print. Technically good, but the three pictures and the three figures are a little bit too formal.

7. KENWORTHY, J. W. (Ashton-under-Lyne).—"On the Steps of a Warwickshire Cottage." Dallmeyer wide-angle landscape, *f*/16; April, fair light, 3.30 p.m.; platinotype, hot bath; whole-plate print. A homely old body, standing at a cottage door, but too evidently put there, and the apron is too glaringly white, and immediately attracts the eye as the principal object.

8. PAINT, E. R. (MISS) (Guernsey).—"Returning from Milking." Instanto, *f*/32; 2 sec., June, bright light, 7.15 a.m. A half-plate silver print, far too dark in the right-hand corner, and wants clouds to relieve the white sky.

9. SEVERS, J. (Kendal). —"Our Pets." Ross single, *f*/15; 1-10th sec., April, sun shining, 3 p.m. "Although the sun was shining I preferred to take the subject in the shade." This quarter-print is spoilt by some curious-looking lines across the top and bottom; the former might well have been cut off, but the latter should have been avoided somehow. A very soft and delicate print; the expression on child's face and portrait of cat are very good.

10. PRICE, A. R. (London).—"Don't Snatch!" Beck R. R., 9 in. focus, *f*/8; half sec., latter part of May, very good light, 9 30 a.m. A very soft little quarter-plate print on Xylonite film, and would have taken considerably higher rank, only that the background does not sufficiently cover the wall and window. The idea of a little girl holding a piece of bread and telling "doggie" not to snatch is very well carried out.

11. NICHOLLS, A. C. (Cheltenham). —"An Impromptu." R. R. Taylor and Hobson, *f*/11; 1½ sec., September, diffused light, open air, 3 o'clock. A very good attempt at a character sketch of "The Three Little Maids from School;" half-plate chloride print.

12. NEWMAN, G. J., JUN. (Cheshire). —"Summer Days." Ross's R.S.; 3 sec., June, bright light, 11.30. Slightly over-printed, or else the negative wants intensifying slightly with mercury and sodium sulphite. The print is just wanting in brilliancy.

13. SAMPSON, E. (near Sheffield). —"Crossing the Stream." Wray's 5-inch focus landscape, *f*/16; 4 sec., June, dull light, 6.30 p.m. A very pleasing little quarter-plate print, but the figures are in the weakest part of the picture—the centre.

14. COPEMAN, R. W. (Blandford).—"Tired." Fallowfield R. R., *f*/16; 2 sec., April, dull light, 1 p.m. "The subject is just over 90 years of age." A half-plate bromide print. This would have been

far more effective if the clay had dropped on to the ground, and the old man's lower jaw had dropped. The print is soft and pleasing.

15. BLACKWELL, G. W. (Sheffield).—"The Modeller." Rectilinear; 10 sec., June, dull light, 12.30. Half-plate silver print. A very good



No. 4.] "A BIT OF NEWS." [*J. W. Evans.*
(BRONZE MEDAL.)

study, but the lighting is curious, and one wonders whether the modeller would not have turned his clay to instead of from the light.

16. POLLARD, MRS. M. M. (Cheltenham).—"Buy my Pretty Flowers." Lancaster, *f*/20; 3 sec., September, 3 o'clock. Half-plate silver print, showing unequal toning at the edges, and the flower seller is far too well dressed for the character. The apron is too white.

17. ARNOLD, J. O. (Sheffield).—"Olive." Wray R. R., *f*/8; 2 sec. April, strong sunlight, about 4 p.m.; matt, silver half-plate print not toned. "Taken in room lighted with one window, without reflectors." This at once strikes one as being a very good representation of a framed portrait; it is soft and pleasing in tone, but the expression on child's face is not happy.

CLASS II.

1. BENTLEY, H. C. (Louth).—"Rustic Courtship." R.R., *f*/16; 2 sec., May, good light, 4.30 p.m. A very good print, but which is a little spoilt by the formal lines of the building in the background, and the straight line of the tree on the right, and the girl's dress is too white.

2. ST. CLAIR, L. M. (London).—"Returning from Market, Nepal." Shew's Eclipse hand-camera and lens, *f*/11; about $\frac{1}{2}$ sec., October, sunshine, 5 p.m. A very clever little quarter-plate study full of sunshine and brilliancy.

3. JONES, W. LLOYD (Cheshire).—"A Cornish Fishing Crew." Dallmeyer R.R., *f*/11; off and on, August, strong diffused light, about 10 a.m. Another very good print, but could have been considerably improved by a little more judicious grouping.

4. WILLIAMSON, J. "Heave, Yoho!" June, 11 a.m., bright sunlight; R. R., *f*/11; 1-15th sec. A very pleasing study of fishermen, although the print is a little bit yellow and wanting in brilliancy.

5. LANGTON, A. (Ilfracombe).—"Crew of 'The Polly.'" Taylor R. R., *f*/22; $\frac{1}{2}$ sec., bright sunlight, noon. Technically a very fine print, though the repetition of crossed arms and legs in the foreground is not pleasing.

6. TENERSHAM, R. K. (London).—"Black and White." Ross' R. S., *f*/11; cap off and on, mid-day, Christmas, India. Very good print, and the child is exceptionally happy in pose and expression.

7. SMITH, H. S. (Bradford).—"Our Skipper." Beck's R. R., *f*/16; $\frac{1}{2}$ sec., June, good light, about 12 o'clock. "The face is untouched. The tarpauline was a bright yellow, which of course is rather a severe test for an ordinary plate." This print is a little too hard, and the branches of the tree should have been painted right out, and replaced by clouds.

8. RUSHAND, W. (Chester).—"Friends." Taylor and Hobson, *f*/16; 1 sec., August, dull, 3.30. A half-plate chloride print on chloride paper, showing very careful technical work, but not improved by the vignetting, and the dress is too white.

9. JACKSON, J. H. (near Leeds).—"Drinking Time." Ross' R.S., *f*/11; cap off and on, $\frac{1}{2}$ sec., June, fair light, 10.30 a.m. This is a half-plate print from a negative insufficiently developed with hydroquinone or else over-printed. It is sadly lacking in brilliancy.

10. C. P. BOLTON (Waterford).—"Young Wood-Rangers." R.R., *f*/11; 3 sec., June, bad light, evening. An opportunity missed; had the children been gathering the flowers or arranging them, it would have scored well. It is now nothing but a group.

The Photographic Convention.

INDIVIDUALITY IN PHOTOGRAPHY.

By H. P. ROBINSON.

IN a recent number of *Blackwood's Magazine* an ingenious writer tries to show that the one thing more than another that now represents primitive man is the baby, and that the nineteenth century British baby differs very little from the savage child of, let us say, a couple of hundred thousand years ago, for the baby is nearly a quadruped, and is a reckless creature devoid of conscience. It is,



No. 3.] "DALE FOLK." [*R. O. Pennington.*
(CERTIFICATE.)

perhaps, a knowledge of the fact that babies are all alike that enables photographers, as it is libellously said, to make the negative of one of the species satisfy the yearnings of many mothers. Now, photography is certainly somewhat like this view of the human

race in the respect that its immature productions are all alike, and it is not until they grow up and acquire a conscience or soul that they differentiate and show individuality.

Of the immature there is no end, but a wise and invariable provision of nature checks over-production. Nature is always wise, but has no mercy—

"So careful of the type she seems,
So careless of the single life;"

and, seeing that the world would be overwhelmed by immature photographs, sent beneficent fading to destroy them (always, as in other departments of nature, "so careful of the type," sparing a few) until the art grew old enough to possess a soul or conscience, and then permanent methods were given to us; and even now we sometimes feel inclined to paraphrase the wisdom of Mr. Whistler, and say modern photographs do not fade, and therein lies their deep damnation. This wonderful preservation of a few in all their pristine freshness is suggestive of a special providence, for according to the scientists, who are, of course, always right, like methods should produce like results, and not one of the old prints should have escaped.

Now, evidence of soul or conscience in a picture is art. Yet there are those who will not recognise that we have a soul, hut, like Mr.



No. 4.] "AFTER THE DANCE." [*R. W. Branthwaite.*

Gilbert's mechanical figures in the *Mountebanks*, are only stuffed full of badly-made machinery that sometimes runs down, and always moves with a jerk; and I am not sure we are not suspected of trying to adopt the "put a penny in the slot" business to the fine arts.

It is a favourite reproach with the opponents of photography as a picture maker that its results are all alike; it is one of the triumphant proofs of those who will not admit that photography is an art that the unthinking machine makes all its products to the same pattern; that there is no intrinsic evidence in any photograph of its maker. They will no more believe the plainest evidence to the contrary than those of old would helieve the angels. They say we are mechanical, and it is of no use pointing out that this wild assertion is obviously untrue; we hear it over and over again, sometimes from one who knows it is not true, at others from those who are simply ignorant and cannot learn. These are to be pitied. Then there are those whose purpose it serves to deny; and worst of all, those who have tried, and altered their faith because they failed, those who, as the poet says, "fade away, and dying damn." To the credit of photographers there have been very few of these; however, we have lately had an exhibition of one of them. A most enthusiastic defender of photography as an art of a few years ago, but who, perhaps, failed to prove it in his works, was politely asked to contribute to a recent exhibition, and is reported to have replied as follows—it is a lesson on the mutahility of things to compare this letter with his former opinions: "I am fully persuaded that photography is not art, nor can be, and to encourage exhibitions is to lead a lot of vain people to waste their time in the practice of a useless and vain pursuit."

It has no effect with the prejudiced critic to point out, that if different minds using the same machines produced like results invariably, as machines are expected to do, any one of them who understood the machine ought to he ahle to turn out a series of masterpieces equal to the best that have ever been produced, always providing, of course, that one machine was as good, and as well brass bound and French polished as the other. Yet they continue to say—and this is one of the latest utterances of science: "The picture painted by the artist is a transcript of his own emotions, but a photograph is not a reflex of human emotions at all—unless, indeed, accidentally so—but a direct reproduction of nature, and only through science the offspring of man." We must be grateful to the writer for allowing us the accident.

I am quite ready to confess that up to a certain point, and in the hands of the ninety per cent. of the followers of the art who are not artists, the photograph is in the process; but with the others the picture is in the man (as in painting, only in a less degree, and as far as the materials will allow). The process takes a very subordinate place, and is dominated by the taste, thought, and feeling of the artist, when an artist uses it with what may be fairly called emotional results. Who has not laughed with many of Rejlander's characteristic heads, or wept—yes, I have seen even that emotional result produced by a photograph (which was not an accident), and it is an important part of my argument that all thesee motions arose first in the mind of the photographer, and would never have heen orginated by the same models in the hands of another photographer.

Of all the attempts made to prove that photography was not an art, that which would have most force, if proved, would be that it howed no evidence of individuality; but, on the other hand, if the possession of that quality were proved, it would be one of the strongest arguments in favour of the admission of photography to the brotherhood of art, for individuality, in its products, necessarily implies the operation of a directing mind behind the "soulless camera."

The latest of the many attempts to define the meaning of the word "art" is a very remarkahle one. It is said to be, "The apparent disproportion between the means employed and the end obtained." And, as an illustration, the following explanation is given, at which, I think, many a practical photographer will smile.

"Admit, for argument's sake, that a photograph reproduces with a fidelity far beyond anything that the hand of man can attain to, it must still be allowed that the means used to attain this end are infinitely more complicated than the few hairs tied to a stick which the artist uses. Indeed, it might be argued that, if *art* is the apparent disproportion between means and end, photography is not art at all, but science. There is no art on the part of the lens when it produces its images; it does so strictly in accordance with natural laws. The developer acts as thoughtlessly as any other chemical experiment, and these are the chief factors in every photograph. It is true you have one small part to play—you must have the *art* of exposing properly; but even here a few shillings will purchase for you a machine to do even this. I do not admit art in development. Art in development is only called in when the exposure has been made without art, and, as I have already allowed art in exposure, I cannot allow it here again. With such an infinitesimal part of the picture the outcome of art, is it honest to call a photograph a work of art?" Are we to understand from this singular piece of reasoning that painting is an art because the painter uses "a few hairs tied to a stick"? and does the writer suppose that we claim photography as an art because of its fidelity—that heritage of the youngest amateur. This curious example of scientific knowledge of art is by Dr. J. K. Tulloch, of Dundee, and was written in the present century.

Some writers get confused between degree and kind. In an article in the *Magazine of Art*, a certain writer, who was once a photographer, endeavours to show that photography cannot become art, because its individuality is limited. That it is more limited than painting has always heen admitted—we cannot go so far away from the truth as is the painter's privilege—but it is also admitted that all methods of art are more or less limited, and the amount of limitation is only a matter of degree, not of kind. The limitations add to the difficulty, but do not alter the status.

Let us run back a little and see if we can find a few workers whose

results are totally different from those of their contemporaries, and this invariably. One of the earliest photographers to show genuine art feeling in his work was Rejlander. He died sixteen or seventeen years ago; yet, among many thousands of photographs, it does not require much experience to recognise a Rejlander. There was nothing in the manipulation to distinguish them, except, perhaps, carelessness. It was the mind of the man that was visible, you recognise the man beyond the process. There are still those living who can say, on looking at a collection of old photographs, this is a Francis Bedford, a Dr. Dimmond, a Fenton, a Delamotte, a Le Gray or Silvy, a Winfield or a Mrs. Cameron," certainly quite as accurately as an expert in painting would say, this is a Raphael, or Titian, or a Correggio. Then, what becomes of the machine argument?

I will now endeavour to put it another way. Photographs, as I have endeavoured to prove, show the mind of the producer—when he has a mind to show—and given two equally gifted photographers, as far as equality can be measured, the one could not produce even a colourable imitation of the work of the other. Neither could dismiss his individuality let him try how he may. Take two representative men, Rejlander and F. Bedford, neither of these accomplished photographers could have imitated the other. They had both original minds, and followed the bent of their genius, and their hands, as well as brains, showed in every picture.

Among the workers of the present day, I could point to dozens of well-known instances, but one or two must suffice. No man's work has been more imitated than that of M. Gale. In every exhibition, he is imitated in size, style, framing, and signature, yet an expert can decisively say of two pictures, This is the Gale, and this the imitation; he can even distinguish between the imitators, and say, This is a ——, and this a ——.

Then, in a very different style, there are the works of our much-respected President, than whom there is no one I would prefer to see occupy the honourable position which defective health compelled me to decline. Perhaps I am not a fit and proper judge of his pictures, but, without altering my opinion of what a photograph should be, I must confess that some of them have captured my admiration for their beauty and respect for other ways than my own when in good hands. Now, some have endeavoured to imitate Mr. Davison and some have renounced photography in despair, because they could only reach the eccentricity without touching the excellence. It is easy to put the image out of focus, but not so easy to make a picture by that means, and Mr. Davison makes pictures. It is easy to copy peculiarities, but not so easy to imitate valuable essentials.



No. 5.] "HAPPY CHILDHOOD." *[J. Tims.*

While on the subject of our President, may I be permitted to add—for he is now in a public position and open to our shots—that, however straitened his views of the practice of photography as an art may have been at one time, his opinions have constitutionally broadened down, until now the key-note of his teaching is liberty for all.

We now come to another proof of individuality. It used to be the practice to insist on anonymity at exhibitions until after the judges had done their work; but this was given up when it became apparent that the judges usually recognised the work of the old hands, and the only nameless ones were new exhibitors. In America—at least, at the Convention Exhibition—the farce of the anonymous is still carried to such an extent that nobody seems to know, officially or otherwise, who the pictures are by until it is too late to be of any use to the exhibitors; and newspaper criticism has to be published without names. For, however the photographs may proclaim their authors, it seems to be etiquette to pretend not to know.

The difference between the works of some of our best photographers and those of the moderately successful can scarcely be due to a scientific cause, except, indeed, to a reversal of the generally received idea; for, I think, if the truth were known, it would be found that the producers of the indifferent pictures had much more scientific knowledge than those who produce the most artistic pictures. I am acquainted with a great many of our photographers, but I do not know one of those to whom we are accustomed to look for the chief ornaments of our exhibitions who have any elaborate scientific knowledge. Indeed, their technical methods are so very simple as to seem quite elementary. They usually take a plate to the make of which they are accustomed, a simple pyro and ammonia developer, a handful of hypo, and a jug of water, and use them properly; and that is all. They do not bring science to bear even on the exposure, at the expense of "a few shillings." They get on without an actinometer. They feel from experience when their plate has had enough, and an actinometer, however perfect, would only confuse them. But, as they endeavour to put taste, thought, and feeling into their pictures, their works necessarily differ from those of the scientist, and the essence of their art is individuality.

My last word must be a word of caution. Be original, be unique if you can, but not out of harmony. Individuality goes wrong when it is out of harmony with its surroundings. Eccentricity is very easy, but it does not last. It is open to the meanest capacity, and is often assumed by it; but genius, to be useful, should consist of individuality, backed up by suitability to its environments.

Mr. CROOKE said he fully endorsed all that had been said by Mr. Robinson. Sometimes the means over-balanced the end, but all depended upon the mind of the individual who stood behind the camera. It was not every picture which should be out of focus; that depended upon the subject. He once had an assistant who had defective sight, and could not see to focus properly, yet his out-of-focus results were sometimes very fine. Small work such as miniatures should not be out of focus, and could not be compared with large work.

Miss C. WEED BARNES said she had lately been out photographing with Mr. H. P. Robinson, and in going home he had said to her, "Now, you've got some good pictures, don't spoil them in developing."

Dr. MITCHELL said that he thought the question was so clear and simple that the paper admitted of no argument.

Mr. C. H. BOTHAMLEY thoroughly agreed with the opinions expressed in the paper. No one could deny that there was individuality in photography. There were many paintings which no one could class as art, simply because they possessed no individuality.

THE PRESIDENT, closing the discussion, said there was not likely to be much difference of opinion as to individuality in photography. Anyone who had attended any of the large exhibitions knew that it was possible to at once pick out the work of certain individuals, although no indication of the worker's name was given on the print. A painter had said that if six painters sat down in the same spot one after the other they would get six different pictures; if six photographers were to do that you would get six prints exactly alike. He would at once deny this. Individuality could be shown throughout, in treatment of negative, etc. Sharp focussing throughout a picture in no case lends itself to artistic results; this was his view, but he claimed that all were at liberty to do as they liked. He considered that both in large and small the very broadest treatment could be used if the printing process was suitable.

The demand for platinum for industrial purposes is relatively restricted, as it only dates from the last twelve or fifteen years. It is largely used for electric lighting and dynamo conductors, and considerable quantities of platinum are now employed in chemical and other factories.

PHOTOGRAPHY IN RELATION TO PAINTING.

By Arthur Burchett.

In commencing this paper on "Photography in Relation to Painting," I feel that I cannot do better than give the definition of both painting and photography.

Painting is a representation of objects on a flat surface, painted by the hand by means of brush, pencil, or other tool being under the will of the artist, unrestricted in fancy, subject, colour, form, place, or period.

Photography is a representation of objects on a flat surface, restricted to the absolute reality of form present, as rendered by the lens on the sensitive plate in the camera, being only under the control of the photographer in development and in *choice* of subject, form, place, focus, and length of exposure, and in some few cases light and shade.

Such being the definitions of painting and photography, we can now see how very limited are our resources in photography, compared with painting, for producing a picture that shall have qualities that give it an art value, for it is not a mere transcript of nature that we require, but a picture containing some sentiment or idea that shall give pleasure to those who see it, and in nature there is in both figure and landscape an endless wealth of beauty that we can



No. 6.] "THE MORNING BATH." [*W. Herbert.*

render, if we see nature with the knowledge of what the camera will do and what it will not do.

Photography being limited to reproducing the objects present without colour (which in painting is often its chief charm), we must, therefore, find out how near photography approaches painting by comparing reproductions of paintings with the work of the lens. Unfortunately, photography is severely handicapped by the inability of the sensitive plate to render the true tone value of all colours, and this inability adds very much to the difficulty we have in judging Nature as she is represented in the photograph and in painting; but even with this defect the result in photography is very close to the true rendering of Nature, and will be even more so in time as photography advances. I need not point out the defects of photography with regard to rendering colour into black and white, for we all know them. In painting, certain colours have a different tone value to some artists than to others, and when their pictures are rendered into black and white, we fail to recognise the likeness of effect to that of the painting.

Both in photography and painting we have to consider in the construction of the picture, the possibilities of its being a success, its story, composition, light and shade, and all the various items that make its being. A painting or photograph must have some reason for existing, some object or story, and this must be the one thing that all else is to be subservient to. In a picture the artist tries all he can do to keep your attention fixed on his principal figure or object, and to do this keeps all his, what we call, "focus" on it, and all else is kept down both in tone and sharpness, so that the eye shall not wander away and become confused by the surroundings. Many pictures and photographs are spoilt by the want of concentration of interest, simply by forgetting this simple rule, in painting by over-elaboration of unimportant objects, brilliant colour or strength which kills the principal object in the picture; in photography by microscopic focus, which puts everything on an equality with the principal object, accentuating things that are unseen by the eye, for the eye sees the thing that is, not what it is made of; a tree is made of many leaves, branches, etc., but the eye sees them as a mass of foliage, not as individual items.

Many pictures are spoilt by want of contrast of light and shade, for it is a well-known rule in art (and art applies to photography as much as painting), that except in exceptional circumstances there shall be no accessory object lighter than the principal object of the picture, or if that is a dark, darker than this object. In this was the secret of the great success of the old Flemish artists, Rubens, Vandyke, Rembrandt, etc. Both photographers and artists cannot do better than carefully study the way in which these masters have managed the light and shade, both in portraiture, figure, and landscape.

The next thing to consider is the composition or arrangement of the figures or objects that constitute the picture or photograph. In painting this is comparatively easy, as the artist can place his figures where he pleases, and use any kind of composition. But the photographer is entirely limited to a more or less equal plane of focus, owing to the distortion the lens gives in figure subjects, for what is simple foreshortening in painting often becomes absolute distortion in photography.

Composition not only applies to the arrangement of the figures but also to the light and shade, which must be so managed that it gives value to the lines of the figures, and in figure and landscape pictures so combine them that they become as a whole. With pure landscape photography composition is impossible, as you cannot arrange your objects; you can only select a view, and can only use the knowledge of composition to help you to choose the best view. In landscape and figure pictures very much can be done in photography, but you are limited to simple arrangement in a selected landscape, which has to be taken just as it is, and which in painting would be so altered and arranged that it would carry the lines of the composition in harmony with the figures.

Light and shade in landscape, which are so important in painting, are quite as important in photography; but here again we cannot arrange like the artist, but are quite dependent upon the effect at the time of exposure, which can sometimes be chosen. It is a very great misfortune that photography will not render the true effect of cloud and sky combined with landscape, for until this is possible we must depend upon the sky from another negative, which more often than not is entirely unsuited to the landscape, and also is, as a rule, printed far too heavy.

In painting, besides the great charm of colour, the artist has one which is perhaps greater, that is, "Ideality," or the rendering of the image of the mind as opposed to the reality. Idealism in painting often merges into mannerism. There are many living instances of this, the weary repetitions of the same form and the same effect. In photography the danger of mannerism is greater, as if we use the same stop to the same lens and the same printing method, our photographs must necessarily look more or less alike, only the difference of form. I suppose it will always be so, at least with the majority of workers who only have one lens. Painting is very much like handwriting, one can recognise the author, but photography changes in character with every different kind of lens, so that it ought to be possible to escape from the more glaring faults of mannerism.

Impressionism must not be confounded with idealism, for impressionism is the rendering of the way the objects or scene appeal to you, how you see it, whereas idealism is the correcting or altering nature to suit what you consider true beauty.

Impressionism in photography is not only possible to a very large extent, but the results are very beautiful, and *do* depend in a very large measure on the artistic aptitude of the photographer and the knowledge of his lens, and though, to those who are unable to see the beauties of nature (and they are legion), it may appear entirely chance work, yet those who are using knowledge both of nature and photography know that the results are precisely those that were aimed at.

And now we come to what is considered to be the great strength

of photography, its imitation of form. In painting it is often colour that expresses form, such as grass, sand, and many other things. There the colour tells what it is, and the mind is satisfied, but in photography, unless there is a *sufficient* indication of form, the representation is vague and leaves the mind wondering and unsatisfied,; it is therefore necessary to the proper understanding of a scene or object that the definition of form shall be such that the objects are recognisable, but how far it should be carried is entirely a matter of individual feeling, for as in the case of idealism, the perception of form is in the mind, to one person form is soft and without line, to another the feeling of form is so strong that he can only express himself by sharp outlines, it is only a matter of thought, for in nature there are no outlines. The impression of nature is to me a soft blending of colour and tones quite unlike the rendering given by what is termed "a nice sharp photo." One of the great difficulties both painters and photographers have, is the introduction of figures into landscape so that they shall not intrude or attract the eye from the motif of the picture. As a rule, we find in the best landscape pictnres, that if a figure is introduced it is placed in the middle distance, and is



TAKEN WITH WORMALD'S "PHOTOMNIBUS."

used more to serve as a known size to give grandeur to the landscape. Turner was a master at this, and though he defied this method in some of his pictures by placing the figures in the immediate foreground, yet he did it so well that they appear away from where the spectator stands, and therefore practically in what is the middle distance. Of late years it has become more the fashion to introduce figures in the foreground, so as to give a title to the picture, but it is very difficult to do so without sacrificing the landscape to the figures. Of course, these remarks do not apply in the case of what are called "*figure* and landscape subjects," for there the figure is the important object and the landscape only accessory.

I am afraid that my paper will not be considered complete unless I make a few remarks on motion, as rendered by the camera and by the artist. I know that it is dangerous ground to tread upon, but I must needs venture. In the expression of movement in painting, the artist does not endeavour, like the photographer, to obtain a perfectly still look or an action that he cannot see, but such an action that shall express the characteristics of the movement he wishes to represent, whether it be running, leaping, falling, etc., and obtains that look of movement, not only by the position of the figure, but also by means of flying drapery. Now, in pictures by many of the great masters, this drapery is painted in indistinct folds, *purposely* to give the effect of movement. There is a very fine instance in the National Gallery, London, "St. George and the Dragon" (by Tintoretto), perhaps the finest example of movement ever painted. To say that movement must be expressed by moved ment expresses what I wish you to understand. In this picture not only do the figures seem to be moving, but the drapery vibrates; but still it has not the same kind of look that photography gives of the blurr of movement, but is of a character that I am afraid photography can never imitate. Another instance of the rendering of movement is Vandyke's drawings of the condemned being cast into hell. The mass of humanity seem to fall headlong. The effect of movement is indescribably true. When an artist looks at an instantaneous photograph of the movement of a figure the chances are that he has never even dreamt of that representation being what it is intended to represent. The very fact of its being a *perfectly* arrested action takes away all sense of movement and makes it only a pose. In landscape the expression of movement cannot be expressed by a perfectly sharp image. How often one hears the remark, "This is not good, as the trees have moved." Yet to an artist it is often the best quality that photography possesses. Turner, the great master of movement, always got the effect of wind in his trees, waves, and sky by indistinctness of detail.

Sea and sky in photography are often perfectly representatives of movement. One need only see one of Dresser's seascapes to acknowledge this, but there are many other photographers who only give the arrested motion, the stillness of death, for it has the form but not the breath of life.

The imitation of nature should be in photography what artists have endeavoured in all ages to paint—that is the life of nature not as a still, sharp microscopic image (for the time is past when we were content with seeing nature under this false light), but as a representation of life as seen by the eye; for what is false to the eye cannot appeal to the mind. It may be a perfect photograph, as far as exposure, development, and printing can make it, but unless it has that something which truly represents the life of nature, it is worthless in an artist sense.

Mr. T. C. HEPWORTH said that the one noticeable point about this paper was the absence of abuse. There was at least one artist who could appreciate photography, probably because he was at once a capable photographer and artist.

Dr. MITCHELL, in referring to the photographing of movement, paid that one physical fact often overlooked was the persistence of vision, which lasted from $\frac{1}{6}$ to $\frac{1}{10}$ of a second. Often a quick exposure represented a moving object as a crystallized thing. The best sea pieces were taken with a slow shutter, and the same might be said of animals. The movement of the small muscles was lost by the eye, and in his well-known pictures Prof. Muybridge showed positions which were not recognisable to the human eye.

Mr. STURMEY said that there was no reason why artists should not select those from Muybridge's studies which were at the same time artistic and truthful.

Mr. F. P. CEMBRANO said that both a photograph and a painting must have a reason for existence; there must be one principal object. Often clouds were introduced which did not suit the landscape, and the best effects were obtained by printing clouds from a separate negative, as the clouds which might be present at the time the original negative was taken might not be suitable from an artistic point of view.

Miss C. WEED BARNES said that before she used the camera she had started painting, and it had been early impressed on her that she should note the highest light and deepest black, and that everything should be subordinate to that, a precept she endeavoured to carry out in photography.

THE PRESIDENT said that Mr. Burchett was at once an artist and a photographer, that he had lost his colour sight and had taken up photography, and that although fortunately he had recovered his colour sight, he had not given up photography. The author had spoken of the difficulty of photography to render the true tone value of colour, but he drew attention to the orthochromatic process; Mr. Burchett had worked out and patented a method of getting over the difficulty by using coloured glasses, and Mr. Burchett had kindly placed some results at his disposal for show.

Mr. J. J. Elliot, of Laygate Terrace, South Shields, has opened up a photographic department for the sale of apparatus, etc., and offers the use of his dark-room free to visitors.

Platinum.—During the last twelve years the annual production of platinum has averaged about 3,194 kilogrammes, of which half has been derived from the beds in the north of the Ural mountains belonging either to the State or to private persons. Throughout the whole world only about 3,270 kilogrammes of platinum are annually used, but it is anticipated that this amount will soon be considerably increased, and it is stated that the platinum beds of Bisserski can alone supply the total quantity required for the consumption of the world. When the demand for platinum was insignificant and the price very low, the gold miners who found platinum while seeking gold, frequently, it is stated, used the former instead of lead, as shot for firing at wild birds. It is only since the demand as increased that greater attention has been paid to this metal. All the platinum extracted from the Ural mountains, after having paid a tax of 3 per cent. in kind, is sent as raw ore to St. Petersburg for treatment and shipment to foreign markets.—*Journ. Soc. Arts.*

MONTHLY COMPETITION, No. 37.

(*Continued from page* 68.)

CLASS III.

Annesley, Miss E.	Cheltenham
Beedie, W. A.	Aberdeen
Bibby, W. H.	Blackburn
Booth, W.	Heywood
Bottomley, J. M.	Tunbridge Wells
Brightman, H. E.	Bristol
Clarke, T.	Sunderland
D'Auban, E.	London
Davies, Miss C.	Swansea
Epps, J., Jun.	Upper Norwood
Gray, F. A.	Devon
Gwynne, J. H.	London
Hartridge, L.	Guernsey
Heaton, J. P.	Olton
Horton, W. H.	London
Jones, A. D.	Manchester
Jowett, R. H.	Aylesbury
Lintott, B.	Horsham
Macadan, D.	Haltwhistle
Malan, H. N.	Ross
Mangham, W.	Sheffield
Maude, S.	——
Measures, J. W.	Todmorden
Pascoe, G. S.	London
Paxton, G.	Kilmarnock
Pearson, M. G.	Highgate
Ray, C.	Surrey
Reay, T. C.	Peterboro'
Robinson, J. W.	Sussex
Salmon, R.	Cambridge
Simpson, E. R.	Wimbledon
Spiller, A. L.	London
Timmins, C. A.	Runcorn
Timmins, C. H.	Higher Runcorn
Vulliams, E. P.	Glosbury
Wadling, H.	Argyleshire
Whitmore, F. A.	Chester
Wilkinson, J. B.	Oldham

CLASS IV.

Acton, M.	France
Adams, M.	Kent
Allender, A. S.	Liverpool
Archer, C. F.	London
Austen, E. S.	London
Barclay, C. W.	Hertford
Borland, F. J.	France
Boyce, W. C.	West Ham
Bradshaw, Miss E. C.	Bishopstoke
Bremner, B. G.	London
Burditt, A. M.	Luton
Bushby, A. E.	London
Cartwright, B. O.	Berks
Cleal, F. J.	London
Crewe, F. A.	London
Daire, S. R.	London
Dawson, J. C.	Wimbledon
Donerty, E. J.	Kent
Douglas, G. E.	Perth
Ellis, W. H.	Highgate
Firth, G. F.	Wakefield
Gape, C.	Norfolk
Geekie, J. A.	Canfrae Angus
Gibson, J., jun.	Hexham
Gwynne, Mrs. F. S.	London
Gyles, Miss L.	Dublin
Hack, H.	Fife
Hallett, C. F.	London
Hanson, A. W.	London
Hammond, F. J. R.	London
Hawkins, R. L.	Cricklewood
Hawthorne, W. T.	Wigtownshire
Heald, H. E.	Surrey
Heath, F. P.	Kendal
Hill, J.	Kingswinford
Hughes, W.	N. Wales
Joscelyne, F. H.	London
Kennedy, P.	Limerick
Knox, A.	Kirkcaldy
Langton, Miss C. R.	Liverpool
Livingstone, J.	Aberdeen
Macgregor, Mrs. A. M.	Yorks.
Macmillar, M.	Rothsay
Martin, J. H.	London
Masse, H. J.	Ealing
Mason, E.	Askrigg
Matthewson, G.	Kirkcaldy
McClintock, R. L.	Woolwich
Meynell, H.	Staffs.
Moore, R.	Glasgow
Moore, W.	Manchester
Neale, G. C.	Yorkshire
Newman, E.	Birmingham
Niblett, Miss J.	Ledbury
Osborn, B. O.	Yorkshire
Parks, A. C.	Bootle
Petty, D.	London
Pratt, W. C.	London
Playfair, G. I.	S. Devon
Randall, H.	London
Reverley, T.	Wantage
Ridge, H. G.	Towcester
Sanders, E. C.	Southall
Sawyer, H. W.	York
Scott, E.	Cork
Shepherd, W.	Rochdale
Skinner, W.	Sheffield
Smith, C. P.	Bristol
Stuart, H.	London
Sutton, G.	London
Warrington, W. E.	Malta
West, R. A.	Cardiff
Whitum, H.	Dunstable
Willman, E.	Rochdale
Young, B. J.	Sheffield

"Amateur Photographer" Competitions.

MONTHLY COMPETITIONS.

DATES FOR RECEIVING PHOTOGRAPHS.

SUBJECT, Inland Scenery, with or without Figures, October 24.
SUBJECT, Sea Pieces or River Scenery, August 22, November 21.
SUBJECT, Portraiture and Figure Study, September 19, December 19.

CONDITIONS.

1. Only one print to be sent in to each competition. The negative of the prize pictures shall be at the service of the proprietors. All the prints entered for competitions shall become the property of the proprietors.
2. The work must be entirely that of an amateur photographer—exposure, development, retouching, printing, and toning. Mounting by the competitor is not compulsory.
3. Photographs may be printed by any process or on any paper, but *must* not be printed on opal or mounted in optical contact on glass, or from an enlarged negative.
4. All prints must be sent in not later than the date given. They will all be acknowledged or criticised in the AMATEUR PHOTOGRAPHER Illustrated Monthly Supplement, the prize photographs and others being reproduced.
5. No name must appear on the print, but the title must be legibly written on the front of the mount, and the entry form duly filled up and enclosed.
6. Open to ladies or gentlemen; one print only to be sent in.
7. All prizes will be in the form of medals from the AMATEUR PHOTOGRAPHER'S dies (small series). No prize-winner will be allowed to compete again for a Medal of the same value as that awarded him. The AMATEUR PHOTOGRAPHER Monthly Competitions are for the encouragement of beginners and those who have never entered a competition or exhibited their work.
8. Prizes—Silver and Bronze Medal, with ribbon and clasp.

THE 1892 ANNUAL LANTERN SLIDE COMPETITION.

Entries will close on September 30th, and the following are the classes and prizes:—

CLASS I. LANDSCAPE, SEASCAPE, AND RIVER SCENERY, with or without figures.

First Prize	Gold Medal
Second Prize	Silver Medal
Third Prize	Bronze Medal

CLASS II. PORTRAITURE AND FIGURE STUDIES.

First Prize	Gold Medal
Second Prize	Silver Medal
Third Prize	Bronze Medal

CLASS III. ARCHITECTURE, interior or exterior.

First Prize	Gold Medal
Second Prize	Silver Medal
Third Prize	Bronze Medal

CLASS IV. INSTANTANEOUS WORK, limited to slides from 5 by 4 negatives and under.

First Prize	Gold Medal
Second Prize	Silver Medal
Third Prize	Bronze Medal

Certificates will also be placed at the disposal of the judges.

Entry forms and conditions, etc., may be obtained on forwarding stamped directed envelope.

"HOLIDAYS WITH THE CAMERA" 1892, COMPETITION.

RULES AND CONDITIONS.

PRIZES:—Gold, Silver, and Bronze Medals, and Certificates, with special prizes of "Niepce" or progressive medals for past prize-winners.

SUBJECTS.—All photographs are eligible that have been taken during the "holidays," but must be landscape or sea pieces with or without figures, views of towns, photographs of cathedrals, churches, public buildings, etc., but not portraiture, figure study, or pictures which could be classed as "Photography at Home." The prize pictures will become the property of the Proprietors of the "AMATEUR PHOTOGRAPHER;" other photographs will be returned if stamps be enclosed to cover postage.

NUMBER.—Not more than twelve or less than six prints are to be sent in. They must all be mounted and numbered to correspond with the numbers in the MS. They will be judged upon their merits as a whole.

DESCRIPTIVE NOTES.—Each competitor must contribute a short account of his holiday, to be not less than 500 or more than 1,000 words.

DATE.—All photographs must be received on or before the 31st December, 1892.

"OPTIMUS" 100 GUINEA COMPETITION.

MESSRS. PERKEN, SON, AND RAYMENT, of 99, Hatton Garden, E.C., have made us a very handsome offer, which we have unhesitatingly accepted on behalf of our readers. They will place at our disposal 100 guineas worth of apparatus, manufactured by them, on the following conditions:—

A. That the lenses used should be of the well-known "Optimus" brand, and have the trade mark and name engraved on the mount.

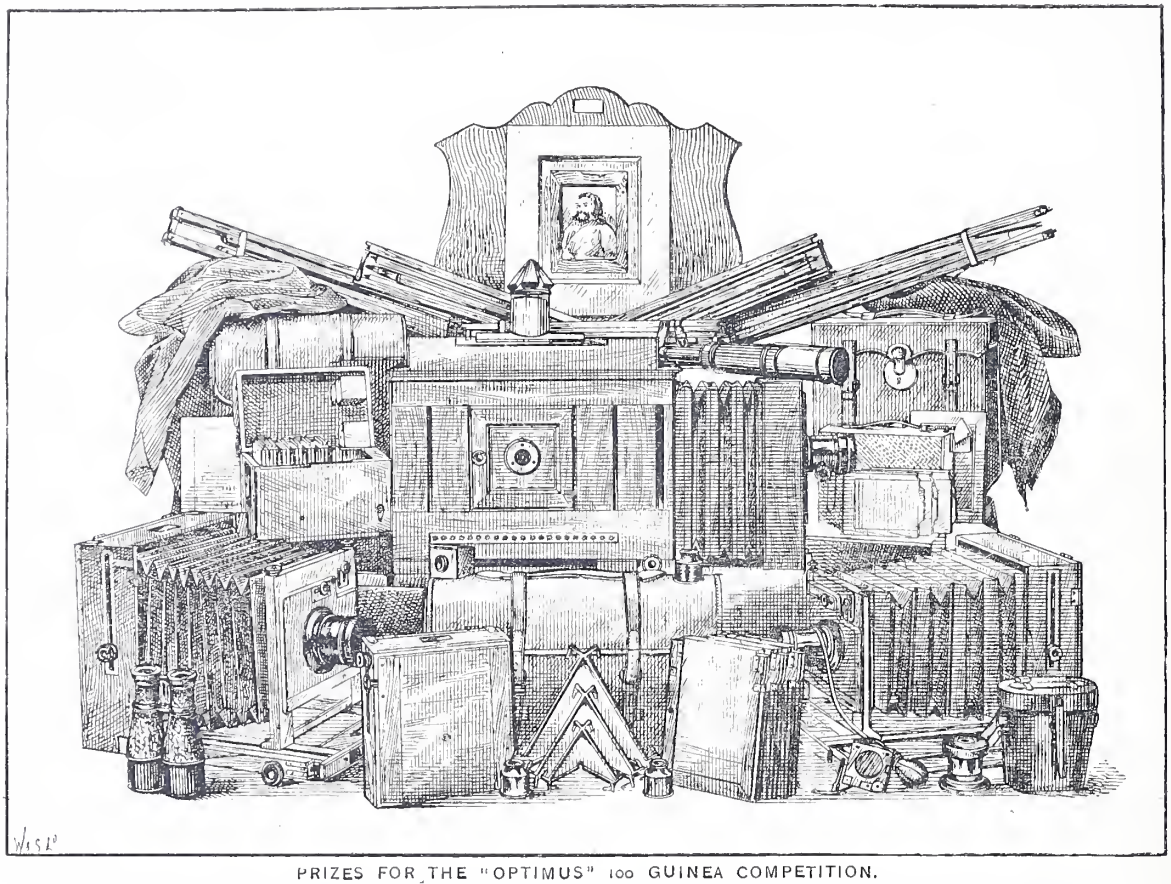
B. All the prints sent in to this competition shall become the property of Messrs. Perken, Son, and Rayment. The negatives of the prize prints shall also become their property.

The following are the classes and rules:—

1. Every prize winner shall be required to make an affidavit that his negative has been produced by the aid of an "Optimus" lens within the given period, and shall produce the lens if called upon.

2. That every print must be from a negative produced since January 1st, 1892.

3. The artistic trimming of prints shall be allowed, but in all cases the full size of the negative must be stated on the face of mount and entry form.



PRIZES FOR THE "OPTIMUS" 100 GUINEA COMPETITION.

4. Enlargements or prints from enlarged negatives will not be admissible.

5. The whole work must be done solely by the competitor.

6. All prints shall be mounted, and bear on the face of the mount in the middle, half an inch below the base of the picture, a written or printed title, and on the back a *nom de plume*. The mount must not project more than one-third of the picture on each side; for example, the mount for a print measuring $7\frac{1}{2}$ by 5 must not measure more than $12\frac{1}{2}$ by $8\frac{1}{3}$ in.

7. With each print must be enclosed an envelope bearing on the outside the *nom de plume*, and inside an entry form duly filled up, bearing competitor's name and address.

8. All prints and entry forms must be received by October 31st, and must be marked outside "'Optimus' Competition."

CLASSES.

1. Landscape, with and without figure. Sub-class A, 7 by 5 and under; sub-class B, $8\frac{1}{2}$ by $6\frac{1}{2}$ and over.

2. Seascape. Subclass A, 7 by 5 and under; subclass B, $8\frac{1}{2}$ by $6\frac{1}{2}$ and over.

3. Portraiture and figure study. Subclass A, 7 by 5 and under; subclass B, 8½ by 6½ and over.

4. Instantaneous work, including also hand-camera work, limited to 5 by 4 and under.

PRIZES.

Apparatus to the value of:—

Class 1.—Subclass A, prize £15; subclass B, £15.
Class 2.—Subclass A, prize, £15; subclass B, £15.
Class 3.—Subclass A, prize £15; subclass B, £15.
Class 4.—First prize, £15.

The competition is open to all—amateurs and professionals.

Latest date—October 31st.

Photographic Procedure.

By E. J. Wall,

Author of the "Dictionary of Photography."

Section V.

THE SENSITIVE MEDIUM AND ITS SUPPORT.

(*Continued from page* 6.)

Sensitometre Rationel.—M. Goderus has introduced a modification of the above sensitometer, as shown in the following figure, in which two narrow slips of the plates to

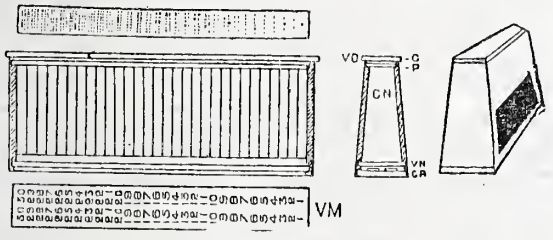


FIG. 129.

be tested are placed in the sensitometer and exposed simultaneously to the same light, when, as in the previously described methods, the relative sensitiveness is determined by the highest number visible.

We have now briefly considered the leading methods adopted or suggested for determining the sensitiveness of plates, but it would not be out of place to include here the method adopted by Messrs. Hurter and Driffield and Mr. Alfred Watkins, as many use the tables of speeds determined by them. Messrs. Hurter and Driffield thus explain their system:—

"It has been customary hitherto to compare plates of different rapidities with the collodion wet plate as a standard, and modern dry plates are spoken of as being so many times as sensitive as wet plates. Apart from the fact that the majority of photographers of the present day have no experience whatever of wet plates, that these alleged speeds are otherwise most arbitrary and unreliable, and that wet plates themselves vary in speed, the system of referring one plate to another as standard is bad. We feel strongly that one of the most pressing photographic requirements of the day is the adoption of a scientific unit of speed, which will admit of an accurate comparison of the rapidity of different plates. We must all feel what a boon it would be if plate-makers were in a position to state definitely on each packet the speed of the plates it contained. We know this is attempted, in a manner, by referring, in some cases, to Warnerke's sensitometer numbers; but this is a most crude and unsatisfactory method of judging the speed of the plates. You may purchase to-day a plate by a certain maker and with a certain label, and you may find it to be a certain speed, but this is no criterion that if you purchase another sample of what professes to be the same plate, in a few months' time, you will find it of the same speed. I could name a certain commercial plate which some months ago had an actinograph speed of 7, while the last packets I procured of the same plate had a speed of 18, or were nearly three times as rapid. In another case I worked with some plates the speed of which was 35; all at once, without the slightest notification of alteration, the speed dropped to 20, or in other words, the plates were about half their original speed. Till plate-makers therefore are provided with and adopt some methods of estimating the speed of their plates, the best plan for photographers who wish to save annoyance and expense is to purchase a large stock of plates at the same time, with a guarantee from the maker that they are all made from the same batch of emulsion.

"Now we have attempted to remedy this defect in the nomenclature and comparison of plates, by choosing as measure for the speed of the plates, the length of time it takes to produce a definite result upon the plate. Let us consider, for a moment, a landscape negative in which there is a considerable expanse of sky, and say of green pasture in the foreground. We all know that in the case of over-exposure, the density of the grass will come more or less nearly up to that of the sky, and a flat, uninteresting negative will result. On the other hand, in the case of under exposure, in the effort to force detail in the grass, the sky will become extremely dense while the grass may be represented by almost bare glass. Now we cannot fix upon a definite density for the sky alone, because almost any density is compatible with either under or over-exposure, but in the case of a rightly exposed negative, be it either generally thin or dense, there is a definite ratio of density between the sky and the grass, which we find to be about as 1·7 is to 1. We have, therefore, decided to take the exposure required to produce this definite ratio of density, under special conditions of light and lens, as a measure of the speed of the plate. Hence we call the speed of that plate 1 which produces this necessary ratio of density between sky and foreground in one second with one degree of light, the intensity of the light reaching the plate being equal to that sent out by the object; and we call that plate speed one hundred which produces the same result, under the same circumstances, in the 1-100th part of a second. It will be obvious that it is impossible, in practice, to comply with the above-named conditions, and the speed has therefore to be calculated from results obtained under practical conditions. An example will best show how this calculation is made. We will assume that a negative with the requisite ratio of density was obtained on June the 8th, at 11 a.m., in the brightest possible light. The light at this time, in our latitude, would be 85 actinograph degrees. The lens used was a rapid rectilinear working at intensity *f*/32, and the exposure given was 2½ seconds. With such a lens and stop, the light reaching the plate is 32^2 or 1,024 times less in intensity than that emitted by the object. As I said before, however, the lens absorbs and reflects a certain proportion of this light, and the amount, in this instance, which actually reaches the plate consequently becomes 1,351 times less than the light reflected by the object. This figure 1,351 we divide by 85, the degrees of light; and by 2½, the time of exposure in seconds; and the result, viz., 6·3, is the speed of the plate."

Mr. Watkins, I believe, exposes plates in the camera to one uniform colour—*i.e.*, to a colour which he has found to be as closely as possible to the prevailing tone of a landscape and from the developed negatives estimates the speed.

Many other methods have been suggested for testing the sensitiveness of plates, such as exposing a plate in a camera to the sky on a cloudless night, and then finding the lowest magnitude star, the image of which had impressed the film, a suggestion which does not strike one as very practicable. Another plan suggested, and one often used by commercial firms, I believe, is the photographing of a white bust against black or dark drapery, and then comparing the results obtained.

It is to be hoped that sooner or later we may have a committee of capable men which shall be able to fix upon some test which may be universally adopted by plate makers, for determining that much-vexed question, the sensitiveness of a dry plate.

Paper and Film Supports.—Hitherto we have been considering merely the emulsion, and tacitly admitting glass as the only support, but it would not be well to dismiss this section without a brief reference to other supports than glass; and, considering the enormous and ever increasing strides lighter supports are now making, a brief historical retrospect may not come amiss.

In the early part of this century Wedgwood and Davy used paper and white leather impregnated with silver salts to obtain images by the action of light. In 1834 Fox Talbot also used paper impregnated with chloride of silver, and in 1838 he tried iodide of silver. In 1839 Fox Talbot accidentally discovered the fact that the latent or invisible

image could be developed with gallic acid. Negatives were thus produced, and although the grain of the paper was apparent, waxing the paper partly obviated this fault. Then in 1871 the late W. Woodbury suggested a paper support, rendered transparent by means of certain resins, and he also suggested using the paper in bands or rolls. In 1876 Warnerke used collodion or bromide emulsion on paper, and Messrs. Morgan and Kidd for years made such paper commercially, some of which the writer still has unexposed, and also negatives made on it. Pumphery introduced films, and Vergara a film of chromated gelatine rendered insoluble by the action of light.

The Eastman Company then introduced what they called a stripping film, which consisted of a film of bromide emulsion, coated on an insoluble film of gelatine, with paper as a support. Fry and Co. also introduced something of the same kind.

The greatest advance made, however, was undoubtedly the introduction of celluloid, which is prepared in a particular manner from pyroxylin; and the Eastman Company and Carbutt were again to the fore. The former manufacturers, however, not content with the cut film, experimented till they were able to turn out the film in lengths sufficient for from 24 to 100 exposures, the bands or rolls of films being used in a special form of dark slide called a roll-holder or roller-slide. Within the last few months cut films have also been further improved, in that they are now manufactured by Fitch and Edwards in a perfectly flat form with no tendency to buckling or cockling.

It may as well be stated here, once for all, that in the following articles, wherever plates are spoken of, films are also meant, and that the treatment of films, except in particular cases, in no way differs from that of glass plates. They are, in many cases where the manufacturers make both plates and films, coated with exactly the same emulsion, and no one need be afraid of using them for fear of having something new and hard to learn.

(To be continued.)

Reviews.

Photographic Reproduction Processes. By P. C. Duchochois. Edited by E. J. Wall. Hampton, Judd and Co., 13, Cursitor Street, E.C. Price 2s. 6d.

This work, which is an English edition of that published in America, will form a very useful addition to our libraries, treating as it does of all the printing processes without silver, such as cyanotype, cyanofer, uranium, platinotype, aniline, primuline, and other processes. Whilst many of the processes are but little known, it is convenient to have in a collected form the leading features of the same, and the work will be welcomed by all who are willing to stray from the beaten tracks and experimont for themselves.

Formules Photographiques. By Abel Buguet. Published by Société d'Editions Scientifiques, 4, Rue Antoine Dubois, Paris. Price 5 fr.

The photographer who has surmounted all elementary difficulties often desires to experiment with different methods of working, solutions, etc., and this little work will be found useful, comprising as it does all the latest formulæ for the various processes extant.

A lunar photograph taken by Professor Holden, of California, has just been enlarged by Dr. Weinek, of the Prague Observatory to the size of twenty times the original. It shows the surface fully nine feet in diameter, the most remarkable feature about it being the river-like lines on it. These markings are many and unlike in appearance, but what they are composed of it is hard to say. For, as there is no water in the moon, streams they cannot be. But of late such a multiplicity of questions have been raised in reference to our satellite that a new and systematic investigation of that orb is requisite.

Printing in Platinum.*

By M. W. THOMPSTONE.

THE first who really appears to have endeavoured to obtain a paper-printing process by the means of platinum salts seems to be Robert Hunt, but as he was unable to obtain a workable one it was allowed to drop till the year 1874, when Willis succeeded in producing the first platinum process that could be relied on, and which, with very slight alteration, is the hot-bath process of the present day.

Willis's process is undoubtedly a toning one, insomuch that platinum replaces iron, in the same manner as gold replaces silver in the albumenised and gelatino-chloride processes.

That ferric were altered to ferrous salts by the action of light was known early on in photography, for Sir John Herschell prepared paper by means of the iron salts, and replaced them after printing with gold.

Willis further improved it by substituting platinum for gold, and in discovering that a solution of potassium oxalate caused a precipitate, also the advantage of the platinous over the platinic salts.

The paper is coated with a mixture composed of ferric oxalate and platinous chloride, but after it has been exposed to light we have present both ferric and ferrous salts in union with the platinum one, but not in a chemical state.

The ferrous salts have only the power of reducing the platinum in the presence of potassium oxalate, but the ferric has no action on the platinum when so treated, so the following reaction takes place: when the print is immersed in the potassium oxalate, the ferrous oxalate formed dissolves, and in so doing throws down the platinum in a metallic state in proportion as it has been acted on by light when exposed under the negative, but where the light has not been able to penetrate the ferric salt remains unaltered, and no reduction of the platinum takes place.

The next thing is to remove the ferric salt, which is done by immersing it in several changes of hydrochloric acid, diluted in the proportion of one part of acid to sixty parts of water.

In the cold-bath process the platinum is added to the developer instead of being contained in the paper as in the hot-bath.

Recently the Platinotype Company have introduced a new paper similar to the hot-bath, but the developer is used cold. This is the process I intend showing you to-night.

The paper having been exposed in the ordinary way till the details can be distinguished, when it is placed in the developer, viz, 1 lb. of potassium oxalate, to 60 oz. of water, the image soon makes its appearance and darkens rapidly, but is quite under control. As soon as it has arrived at the required density it is placed in the first clearing bath and left for about five minutes, then in a second and a third till there is no trace of yellowness in the last bath, washed for about half an hour, dried and mounted in the ordinary way.

I find that I get better results with a thin but vigorous negative than I do with denser ones, and as for results I don't think those obtained by means of silver can compare with the platinum for their velvety softness and beauty of tone.

Herr Rudolf Mayer Nachf, of Munsterstrasse, next the Munster, Friburg, Baden, has opened a dark-room for the free use of all amateurs and tourists who may be travelling near there.

Mr. Paul Lange has again revisited Norway this year, and covered new ground, and has now a lecture ready for delivery. His previous lectures on "Iceland" and "Norway" are well known, and well worth hearing and seeing, illustrated as they are by lantern-slides.

Newcastle-on-Tyne.—On the 14th inst. a party of sixteen members had an outdoor meeting down the Tyne. The party journeyed by the one o'clock boat from Newcastle Quayside to North Shields, several exposures being made at the shipping on the way down. On arrival at the Fish Quay the number of cameras on the scene caused a good deal of excitement amongst the fisherfolk, several being very anxious to be photographed. After exposing a number of plates on the various groups, the party crossed the river to South Shields, when Mr. William Parry, who ably acted as leader, photographed the members. After tea Mr. Parry kindly showed them over his studios and printing rooms. A most enjoyable day was spent, and the weather was all that could be desired.

* Read before the South Manchester Photographic Society.

Societies' Meetings.

Ashton-under-Lyne.—On the 21st inst., Mr. Wm. Chadwick reporting on the Society's outing to Broadbottom, July 16th, stated that, owing to the inclement state of the weather, only eighteen members put in an appearance, and, considering the rain only ceased a few minutes before starting, he thought it a good muster. The party left Guide Bridge station at 2.18 p.m., arriving at their destination about 3 o'clock, no time being lost in getting to work, but the strong wind which prevailed during the afternoon prevented many good pictures of river scenery being secured; in fact, the wind was blowing a perfect gale, and it was impossible to get the foliage in anything but a blurred mass. Mr. Chadwick gave a Darlot compound focussing glass for the best picture taken on the "out." The prints were judged at the Society's rooms, 21st inst., by Mr. Tom Heywood (late President, Oldham Photographic Society), the prize being awarded to Mr. W. H. Pleasants. Mr. Heywood showed in one or two cases how really good pictures might have been made by cutting the prints down instead of sending them in the full size. During the evening samples of the celebrated Paget Prize plates were distributed amongst the members, the same firm presenting the Society with a framed enlargement showing the excellent results which have been obtained on their plates. Members are reminded of the ramble to Crowden, July 30th. Leader, Mr. Charles Lord.

Brixton and Clapham—An ordinary meeting was held on the 19th inst., Dr. Reynolds, President, in the chair. Some interesting questions were taken from the box and discussed, one of them being, "Is it necessary that the axis of the lens should be at right angles to the plate?" Upon this opinion was fairly evenly divided, but apparently the majority considered that it was not absolutely necessary. Another question which is of interest at this season of the year was, "Is it advisable for sea pictures to use a quick plate and a small stop, or a slow plate and a large stop?" and the feeling of the meeting seemed to favour the latter view. A third question was, "Does any member find the Ilford P.O.P. paper tone rather slowly?" This was answered in the affirmative. Subsequently the club lantern was used to throw upon the screen some slides contributed by Mr. J. Goldby and the Hon. Sec. The Paget Plate Company kindly sent some samples of their Prize plates for distribution amongst the members. The following works were kindly presented to the library: by the Britannia Works Co., "Ilford Manual of Photography," and by the Fry Manufacturing Co., "Bromide Enlarging."

Great Yarmouth.—The members of the above club started on the 19th inst. for a cruise on the Norfolk Broads in the yacht *Twilight*, kindly lent to them by Mr. Bly. They left the Vauxhall Station, Great Yarmouth, by the 7.40 train for Acle, where the yacht had been left overnight, thus avoiding the delay of the sail through this part of the river Bure, which is not very interesting, and which does not offer many opportunities of a snap-shot. All the provisions and gear having been got on board, breakfast was served and a start made at ten a.m. Favoured by a fair wind the yacht glided along, and the mouth of the Thurn was soon reached. A sudden bend in the river here necessitated a beat to windward, so two of the members volunteered to row the dinghy, and thus ease the yacht. The celebrated old ruin of St. Benet's Abbey was passed, and snap-shots made *en passant*, also the entrance to Ranworth Broad, soon after which the mouth of the river Ant was reached, and here again a fair wind was obtained, which soon brought the yacht to the bridge at Ludham. Here the mast had to be lowered, so that the yacht might pass under the rather narrow arch of the bridge. Sail was set again, and a very pleasant trip made up this interesting but rather narrow river with its sharp turns and picturesque scenery. At length Barton Broad was reached, and, after a sail round, the yacht was brought up alongside the bank, just inside the mouth of the river Ant, where some very picturesque cottages, farm-houses, and the picturesque old church afforded an opportunity for several shots. At 1.30 dinner was served and thoroughly enjoyed, for a sail on these waters is very conducive to a good appetite. Unfortunately, rain began during dinner, and continued so heavily that the yacht was started for Stalham. A wet run was made over Barton Broad and into the Stalham Dyke, where the river is lined on both sides with lovely white lilies and bulrushes. The yacht was safely brought up at Stalham Staith, and two of the members left by train for Yarmouth. After a very wet and stormy night, Wednesday morning turned ont more favourable, so after a good breakfast a start was made in the dinghy and several fine views taken. Wednesday night was less windy, and with two comfortable cabins and a nice warm fire the members passed a pleasant evening, and obtained a comfortable night's rest. Next morning the yacht was joined again by other members, and a pleasant day's sail was made back through Stalham Dyke, and over Barton Broad to the Thurn river. Here a pleasant trip was made on to Womack Broad, where the quaint views to be obtained offered a good field for the cameras. Fine weather prevailed, and, after a pleasant trip, Potter Heigham Bridge was reached in the evening, and some of the members returned to Yarmouth by train. On Friday a start was made again, and the trip to Wroxham begun. The scenery past Horning town and Salhouse, Wroxham Broad up to Wroxham Bridge is so picturesque that many favourite spots were photographed, and the yacht was at length left at Wroxham, from whence the members returned home, after a most pleasant and profitable cruise on these delightful and picturesque waterways.

Hackney.—Meeting held on 19th inst., Mr. C. F. Hodges in the chair. Mr. Nunn showed prints taken of the animals at the Zoo, and a plaster mould he had photographed—gave six seconds with rapid plate, *f*/16, by gaslight. A discussion on sticking (when using gelatino-chloride paper) was then taken up. Mr. Reynolds advised the use of a glass, which was first heated, and then putting on wax and rubbing with flannel until very little wax was left. The chairman had used ebonite, and as an emergency the papier-maché trays now so commonly used. Mr. Dean said he thought if alum were used before squeegeeing [to plate prints would not stick. Mr. Poulson used ferrotype plate. The Chairman observed that people as a rule were too much in a hurry, and tried to peel them off before thoroughly dry. Mr. Dean showed a print from a mayfly which he had shut in a book and then photographed. The edges were stained of the negative, which had been developed with ferrous oxalate. Mr. Beckett observed that he would put the negative direct into the fixing-bath. Mr. Hensler asked how to stop up holes in negatives. Mr. Foulkes-Wirks said, if thin negatives, would varnish, and then use the pencil. Mr. Beckett said he would match the colour of the negative—with colour. The chairman said he once lost part of a negative through film getting torn. Mr. Foulkes-Winks said he would advise under such conditions that a print be taken in platinum and then filling in with pencil, and then a reproduction taken. A question was then asked as to a good combined toning and fixing bath for Aristotype prints. The Eastman last formula was recommended. Mr. Sodeau observed that corks in these bottles of solution was not to be recommended, as the solution would not keep so well. A question was asked on intensifying with quinol. Mr. Beckett said he used cyanide of silver as fixing—if not thoroughly washed, stains would result. Mr. Winks said when printing for platinum toning it would be best to print darker than usual. Mr. Hensler then asked how to use saturated solution of hypo. Mr. Sodeau said, take 1 oz. of solution and 1 oz. of water. Dr. Colquohoun was nominated for membership. Mr. B. Foulkes-Winks then gave a paper on "Dodges." Among the hints given were how to back plates, how to reduce with ordinary camera, flatten silver prints (by passing a paper-knife over the back) to cure pinholes, transparent spots (the former with retouching medium and pencil, the latter with a tint composed of black, blue, and crimson lake); blisters (prick at back of print), and he advised anyone using silver paper to use a 60 grain bath.

Haltwhistle.—The July outing took place on the 20th inst., having been postponed owing to the general election, Whitfield village, a distance of eight miles, being chosen, permission to visit the grounds of Whitfield Hall having also been granted by Mr. Blackett Ord. Twelve members were present, and enjoyed a pleasant outing. The day was fine, and a drive over a most hilly road was full of adventure—a considerable portion having to be done on foot. After arriving at the village and a light refreshment a start was made along the banks of the river Allen, which affords a great variety of excellent scenery, and no difficulty was experienced in spoiling plates. An excellent meal was partaken of at 4 30 at Mr. Hindmarsh's Hotel, and after visiting and exposing plates on the interior of the parish church a start for home was made at 6.30 p.m.

Herefordshire.—On 21st inst. the members of the above society held a field day at Hampton Court, by kind permission of Mr. J. H. Arkwright. The weather was all that could be desired, and the party arrived about three o'clock, when Mr. J. S. Arkwright, in the absence of his father, conducted the party over the house, together with the members of the Leominster Society. Tea was provided by the kind hospitality of Mr. Arkwright, after which the President, Alderman Blake, returned thanks to Mr. Arkwright for the very kind reception he had given them. Mr. T. Smith seconded, and it was carried. The party left the Court for Hereford about six p.m., after a very pleasant outing. The results of the competitions are as follow:—May: First, Mr. Jno. Parker, Mr. E. G. Davies; second, Mr. R. Dugdale, Leominster; third, Mr. W. C. Gethen. June: First, Mr. Jno. Parker; second, Mr. E. G. Davies; third, Alfred Watkins.

Leytonstone.—The members had a most successful outing on the 23rd inst. to High Barnet, which was reached shortly after 3 o'clock, where the company were met by Mr. Hubert Elliott, of the well-known firm of Elliott and Sons, by whose kindness they were all provided with Barnet plates. Under the guidance of Mr. Elliott the company were piloted round Barnet and Hadley, which is full of historical subjects. The stocks on the green, the high stone, Monken Hadley Church, the old oak commemorating the scene of the Battle of the Roses, Hadley Woods, and various other spots having been

visited, the party were invited to Mr. Elliott's mansion to a most sumptuous repast. The President, Dr. W. Pickett Turner, E.C.C., who had driven over with Mrs. Turner, Hon. Secretary, and others having been introduced to Mr. and Mrs. Joseph J. Elliott, the party were next shown over the magnificent grounds, where boating on the lake and tennis were in full swing, permission having been graciously accorded by the worthy host. Several members had some excellent shots in the grounds. The company were next shown over the house. The pictures (some of which were of great value) were specially admired. Mr. and Mrs. J. J. Elliott having been sincerely thanked for the gracious manner the Club had been received, the party were next invited to inspect the far-famed Barnet Plate Works, at the entrance of which they were met by the Manager, Mr. Birt Acres, who personally conducted, in conjunction with Mr. Herbert Elliott, showing the whole of the premises, several of the managers of departments and others being in readiness to give special information of their respective departments as they in their turn were visited. To describe all that was seen would occupy more space than can be here given to it, as there would be little difficulty in taking several pages, but the carbon enlargements life size of figures and animals, and the Cadett machine for coating plates, for which the machinery in all departments were at work, were especially interesting; in fact, amateurs who see the process that a plate has to go through from the glass crate to the packet of dry plates cannot but marvel how it is we can possess them at the price we do. When the last department had been through, of which there had been about forty, we were surprised, although we had hurried through, it had taken two hours. High Barnet Station was next made for, and Leytonstone reached at 9.45.

North London.—On 19th inst., Mr. J. Brewer in the chair, the Secretary exhibited Messrs. Beck's "Frena" hand-camera for films, and Messrs. Houghton's "Shuttle" camera for quarter-plates, which had been lent by the makers for that purpose. The action of the "Frena" in releasing the films after exposure, each film coming to the front in turn, was much admired, as also the various arrangements for sighting and exposing, which have been well worked out in a convenient and practical manner. The peculiar and special action of the "Shuttle" was fully explained, the simplicity and certainty of the changing movement being of especial interest, while the arrangements for focussing and exposing were thoroughly examined and appreciated. The opinion was strongly expressed that both cameras, each for its own special work, should take very high rank among the hand-cameras now before the photographic world. Messrs. Beck's "Bynoe" printing-frame was also introduced and attracted much interest. Satisfactory reports were received of the Eastman chloride paper, most successful prints being shown, and the trials of the Ilford Isochromatic plates had given great satisfaction, one especially fine negative of cherries being shown by Mr. Brewer. Mr. A. E. Smith showed pictures taken with lenses arranged as in an opera glass giving a telescopic result, and the Secretary showed cardboard dark slides made for use with films. No meetings during August.

North Middlesex.—On 25th inst., Mr. F. Cherry in the chair, about thirty-five members and friends were present, and three candidates for election were nominated. The Chairman introduced Mr. Bedding, who addressed the meeting on "Photography by Rule." He contrasted the somewhat rule-of-thumb methods of the early workers with the present craze for innumerable formulæ, each requiring to be weighed and measured with scrupulous nicety, and each (though compounded to effect the same purpose) differing so widely in their constituent parts that neither science nor judgment seemed to have been consulted in constructing them. He expressed the opinion that the work produced in the early days had yet to be beaten, and that the general average was higher then than now. He pleaded for a cultivation of the reasoning powers based upon the worker's experiences, whether successes or failures, and deprecated an implicit trust being put in incomplete tables of exposures and fallible actinometers. He urged upon his audience that all could and ought to acquire technical excellence, upon which those who possessed artistic feeling might base their higher attempts. In the conversation that followed, Messrs. Beadle, Wall, Matthews, Pither, Johnson, Smith, and the chairman took part. Views taken at Kingsbury and Burnham Beeches were then voted upon. The latter competition was well entered for, and the vote of merit was accorded to Mr. Marchant. The remainder of the evening was devoted to technical questions and answers.

South London.—Ordinary meeting on 18th inst., Mr. L. H. Greaves in the chair. At the conclusion of the ordinary business Mr. J. Miller read a paper "On Photographic Dodges and Combination Printing." After a few hints as to the practical use of the camera, Mr. Miller advocated the use of the following developer, which he had used for a considerable period in Great Britain and South Africa, and with it had been able to develop plates of any make:—(A) Sulphite of soda, 300 gr.; citric acid, 20 gr.; pyro, 100 gr.; distilled water rain water or boiled water, 16 oz.; dissolve ingredients in order named, each to be dissolved before the next is added. (B) Bromide of potassium, 50 gr.; water, 60 oz. (C) Liq. ammonia, ·880, 2 drm.; water, 16 oz. For normal exposures take ½ oz. each of A and B. In another measure take ½ oz. of C, adding it to A and B immediately before development. For under-exposure use less of B and more of C. For over-exposure use less of C and more of B. In cases of great contrast reduce the quantity of A. The lecturer stated that he considered every negative, no matter how good, was capable of improvement, and proceeded to explain how this could be effected. Before anything was done he always took a rough proof from the negative. Matt varnish was useful to increase contrasts, as it could easily be scraped away from any part which it was desired to print more deeply. It could also be used to retard or keep back any part that printed too deeply, and afforded a fair surface to retouch or stump upon. Tissue paper without any grain, such as is used by draughtsmen, could be employed to effect similar results, by fastening it on the back of the negative with starch. Portions of this could be cut out with a knife, and afterwards removed easily after damping, or the paper could be made transparent by applying the following mixture with a brush, viz, Canada balsam, dissolved in benzine, using sufficient of the former to prevent the solution spreading when used, and afterwards adding three or four drops of castor oil. Portions of negatives could be blocked out by the application of lamp-black to the paper. Mr. Miller advised the use of a piece of discoloured silver paper in the frame when making prints, to prevent discolouration and contraction. Prints should be washed and toned as quickly as possible. The faces should be sponged before being placed in the toning bath, as this facilitated toning. The bath was made up as follows:—Acetate of soda, 340 grains, bicarbonate of soda, 35 grains, chloride of gold, 4 grains, distilled or boiled water, 80 ounces; keep for a day or so before using. The various methods of producing combination prints on silver paper were dealt with at length. To remove the discolouration from the edges of old plates, and for reduction, the lecturer advocated the following, viz.:—Iodine dissolved in water, using a few crystals of bromide of potassium to bring about dissolution, and adding same to the hypo bath. The solution of iodine must not be too strong.

Southsea.—The usual monthly meeting was held on the 20th inst., the President in the chair. The prizes (photographic apparatus) given by the President and Vice-President for the best results of an excursion to Bosham were presented to the winners by the Chairman in an appropriate speech, after which a number of slides were put through the lantern. A series of views of Californian scenery, by Major Wilkinson, R.E., were of special interest. Mr. Hammond exhibited some admirable flower studies, many of which went to prove the marked superiority of isochromatic plates for this branch of photography, whilst his studies of local bits, mostly from hand-camera negatives, left little to be desired. The Hon. Secretary showed a few slides, by reduction, mostly from excursion negatives. A discussion took place on the best method of combining clouds with the subject on lantern slides. Mr. Hammond explained that although many of his best results were obtained by printing on the same plate as the landscape, by masking the latter he also occasionally reduced the sky portion of the negative, and so obtained clouds at one printing. Major Bruno preferred to print them on the cover glass. In connection with the exhibition to be held in October, the Hon. Secretary (Major Bruno, Ordnance Lodge, Portsmouth) will be glad to hear from intending exhibitors of novelties in apparatus new processes, etc.

SOCIETIES' FIXTURES.

July 29.—RICHMOND.—Show of Prints.
" 30.—BELFAST.—Excursion to Donaghadee.
" 30.—OLDHAM.—Ramble to Plumbley for Holford Hall
" 30.—ASHTON-UNDER-LYNE—Ramble to Crowden.
" 30.—STOCKPORT.—Ramble to Chester.
" 30.—LEYTONSTONE.—Excursion to Greenwich.
Aug. 1.—RICHMOND.—Excursion to Guildford.
" 1.—BRIGHTON AND SUSSEX.—Excursion to Littleworth.
" 1.—CROYDON.—Excursion to Betchworth, Brockham Lime Works, and Reigate Hills.
" 1.—OXFORD.—Walk.
" 1.—S. LONDON.—Excursion to Taplow.
" 1.—CARDIFF.—Ramble to Monmouth and the Wye.
" 3.—S. LONDON.—"Printing Processes."
" 4.—HEREFORD.—Excursion to Malvern.
" 5.—CROYDON.
" 5.—LEWISHAM.—"Hand Camera Work," by Mr. H. L. Davis.
" 5.—RICHMOND.—Informal Meeting.
" 6.—PLYMOUTH.—Excursion to Lopwell.
" 6.—PAISLEY.—Excursion to Kilmarnock.
" 6.—PEOPLE'S PALACE.—Outing, London Bridge to Greenwich.
" 6.—CARDIFF.—Ramble to Newport Canal.
" 6.—WARRINGTON.—Ramble to Halton and Preston Brook.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5772. **Powell's Compressed Gold Baths.**—Can any brother amateur tell me how to get a good black tone by using this gold bath on Ilford's printing-out paper, as when my prints are toned with it they go to a brick-red colour when they are put in the fixing bath? Any hints as to toning will greatly oblige.—PROVINCIAL.

5773. **Hand-Camera Shutter.**—I am about to make a hand-camera. Will someone kindly recommend a suitable shutter for same, not too expensive?—W. E.

5774. **Snap-Shot.**—In developing my hand-camera exposures I am troubled with a want of density along one end of plate or other, chiefly the hinge end of slide. It extends for half to one inch into plate; the image is there with all detail, but the density shades off to edge of plate. I have supposed my camera might be too far in case, and edge of hole casting a shadow over lens be the cause, or is it light leaking in slides?—SNAP SHOT.

5775. **Bromide of Copper Intensifier.**—What is the objection to the use of the bromide of copper followed by ammonia, as an intensifier, as it never seems to be recommended in the photographic manuals? It has the advantage of not being such a virulent poison as the bichloride of mercury as well as being less expensive.—CU BR.

5776. **Bromide Paper Developer.**—What quantity of hydro 10 per cent. solution and carb. soda saturated should be used to make bromide paper developer? Should bromide pot. be used; and if so, how much 10 per cent. solution? How am I to prevent stain on paper when using hydro, and how to clear some already stained?—MICKY.

5777. **Zermatt.**—Will any reader kindly give me information about Zermatt, Switzerland, and the Valley of the Rhone, the best views to take, time of day, and exposure with Edwards' Green Label landscape plates; also inform me if any of the hotels have a dark-room? Exposure would, I assume, be slightly quicker than in England.—H. O. J.

5778. **Dark-Room.**—Can any reader tell me of what place I can use for changing and developing my plates at Penmaenmawr, North Wales, as I am going next month, and there is no dark-room in this place on the AMATEUR PHOTOGRAPHER'S register?—S. L. W.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

July 15th.—No. 5756.
,, 22nd.—Nos. 5760, 5761, 5762, 5763, 5764, 5765, 5766, 5767, 5768, 5769.

ANSWERS.

5752. **Burnishing.**—Make your solution of castile soap 1 oz., to spirit 20 oz.; rub well over the print; when about three-fourths dry, pass through the burnisher, which should be about hot enough to be borne by the hand. Your fault may be in not heating the burnisher enough, insufficient pressure, or allowing the print to get too dry. They should be just dry enough so that the card begins to turn inwards. Always pass the prints through twice, once lengthways, then sideways; if a print will not take the polish, breathe upon it well before burnishing. Many operators use finely-powdered castile soap and apply with a pad of flannel.—EDITOR.

5753. **Whitby.**—Full particulars of Whitby, dark-rooms, places of interest, and a list of plates, to be obtained there will be found in the 1892 "Annual"—EDITOR.

5759. **Weston-super-Mare.**—Full particulars will be found in the 1892 "Annual."—EDITOR.

5770. **Stratford-on-Avon.**—Apart from its associations, Stratford is not a very interesting place, and the following are the principal subjects, arranged in the order they should be taken: Anne Hathaway's cottage, church from Old Loch, theatre, church interior, Shakespeare's birthplace, Guild Chapel and grammar school, church from meadow. A charge of a guinea is made for photographing the interior of the church, but on application to the vicar (Rev. G. Arbuthnet) permission will be given to *bona fide* amateurs free of charge. The chancel is a difficult subject, as it is usually thronged with visitors. The best time is to go between one and two, when tourists are at lunch, and to use a very quick plate (which *must* be backed). With a rapid plate and *f*/32, an exposure of about eight minutes will be ample in a good light. The view of the church from the meadow will require to be taken in the evening.—J. G. P.

5771. **Fixed Focus.**—I certainly did not understand from Fra's query that by lens *f*/8 was meant, either by misprint or otherwise, 8 in. focus, or I would have advised him that he could not well pitch upon a more unsuitable lens for hand-camera at *fixed focus* than a half-plate lens. This is evident by applying the formula $D = 2\,7 \times \frac{a}{f} \times f^2$, which gives for 8 in. focus lens working at *f*/8, 21⅓ yds.; at *f*/11, 14¾ yds. and at *f*/16, 10⅔ yds., which is too great a distance for average work. The distance can only be reduced materially by employing a small stop, which again is unsuitable for instantaneous work. He had much better get a short-focus single lens, such as is sold at 3s. 6d., and which works well at *f*/16 with a distance of 4 or 5 yds. With 8 in. focus lens at *f*/8, the distance to the ground-glass would be 8 1-12th in.; at *f*/16, 8 1-6th in.—W. A. W.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

TOOTLES.—We hope to forward the prints this week. The combined bath should be filtered before use.

F. HOARE.—You do not give us quite enough data to reply upon. But try neutralising your chloride of gold with bicarbonate of soda, about 30 gr. for every grain of gold, then add to the acetate, allow to stand for 24 hours, and after having washed your prints thoroughly free from silver, tone till on looking through them they show no sign of red in the shadows, then fix in a hypo bath made by washing 2 oz. of hypo in 20 oz. of water with ½ oz. of washing soda added to it. Write again if unsuccessful, and send us some prints to tone for you.

A. G. P.—Cover the spot of grease with powdered French chalk, above this place a piece of white blotting paper, and iron with a hot flat iron. You might also try applying benzine with a soft piece of flannel; we prefer the former method, however.

W. S. BERRIDGE.—Prints returned this week.

R. TEGLIO.—The cut was accidentally omitted, but put right last week.

E. R. TWIST.—Obtain from almost any photographic dealer, a few labels printed in English, French, and German, which explain the nature of the contents of boxes. Photographic apparatus and plates are so well known as to cause but little trouble now.

G. A. CRACK-CALVERT.—They would come under Inland Scenery; we shall have a special competition next year for them. Many thanks for good opinion of "Annual."

W. W. NAUNTON.—Thanks for slides returned, the certificate shall be sent on.

H. F. LINGING.—The comparative speeds are 25 and 35 respectively, so that if you give 1 sec. for the ordinary, the rapid will require 3-5ths sec. If you adopt the method of mixing the bath as recommended, it is perfectly safe. You will find a very good paper on toning baths on pp. 12 and 22, July 1 and 8; try the bath recommended there. The paper will give very warm tones with the borax bath.

F. P. HEATH.—The effect of your print is very good. We do not think that such prints as yours have been severely handled; it is a truthful representation of what we ourselves saw in Prince's Gardens, when at the Convention, but the only fault we have to find is that the stonework is a little too black; it should be, we think, a shade or too lighter than the nearer tree. Had you used a yellow screen and given a fairly long exposure, you would have got the buildings out clear, but destroyed the effect.

P. POUTER.—We publish this week a list of all our competitions, as you ask, still the latest dates are, Inland scenery, October 24th; sea pieces, August 22; and November 21st; portraiture, September 19th and December 19th. The cost of a silver or bromide print would be far above the realms of possibility, and we cannot at present make any changes.

J. H. D.—The black speck might be caused through pinholes on the negatives, or by contamination of the toning or fixing baths with pyro or iron. They are sometimes caused also by iron particles in the paper, but we do not think yours are due to this. When do the spots make their appearance?

ENDEAVOUR.—Collotype may certainly be worked by an amateur, and without very much outlay. The simplest process is that of the Autocopyist Company, of London Wall. To explain the collotype process is a little beyond the limits of these columns. Wilkinson's "Photo-Engraving, Collotype, etc.," price 5s., and Schnauss' "Colletype," price 5s., are the best books. Unless you have a lot to do you would find it almost as cheap to get collotype done for you, and we could give you addresses of firms who would undertake your work.

A. J. T.—We shall be very pleased to help you further, in any way that we can.

B. T. NUNNS.—(1) The paper usually takes about a quarter of an hour to tone. The cause of your particoloured prints is due to the use of a simple sulphocyanide and gold bath; see our issue of July 8th, p. 22, second column, for reason, and also for improved formula. (3) Yes, the acid is right. (4) The addition of ferrocyanide is beneficial and worth using.

J. BENNETT.—Wilkinson's "Photo-Engraving and Collotype," price 5s., and Schnauss "Collotype, Photo-lithography," price 5s.; both can be had from our publishers.

T. J. STANLEY.—The bath will work all right if filtered. You will find a very good formula on p. 22, July 8th.

H. B. HARE.—Letter received with thanks, entry form shall be sent on.

H. T. BABINGTON.—Either your fixing bath is acid, or else you have been fixing pyro-developed negatives or iron-developed bromide prints in it. Make a fresh bath, be very careful of clean dishes, etc. Add ½ oz. of washing soda to the solution, and then try again.

FIX.—(1) Printed too deep, or else negative insufficiently developed. (2) Negative under-exposed, printed too deep. (3) Negative too thin, over-printed, over-toned. (4) Under-printed and over-toned. (5, 6, 7, 8, 9) These strike us as being from fogged negatives, are all over-printed and over-toned. (10) Under-printed and over-toned. Your work shows very great want of knowledge, probably in developing—you are using too much ammonia, and thus fogging your plates, and consequently not getting enough density.

THOMAS CLARKE.—The Supplement appears this week.

A. J. GARWOOD.—You can either use Howard Farmer's ferricyanide reducer, or else Belitzski's; the former is easier prepared. When using Eau de Javelle you should make a solution of chrome alum 20 gr., water 1 oz., and mix equal quantities of this with Eau de Javelle and water, and then apply. To remove the mercurial intensification, paint with hypesulphite of soda solution.

PLATES.—The marks on your plates are due to their being light-fogged, or else imperfect fixation, or using an alum bath before or after fixing without washing; the first is, we think, the cause, however. Do you want plates back? If so, send address.

A. F.—(1) The advantages of having a camera brass bound, is that it is much stronger and less liable to warp or swell from the effects of heat or damp. (2) In using the eikonogen developer you mention, to accelerate it add more of solution to the washing soda; to restrain it, add more water or lessen solution B, or preferably add bromide of potassium to it.

W. M. HANKINSON.—Piper and Carter, 5, Furnival Street, E.C., publish the book you name at 2s. 6d., or our publishers would send it to you.

W. H. BIBBY.—Print duly received and entered, we fancy it will come out pretty high, but wait and see.

BROMIDE.—Place the lantern in a wooden sugar box, and allow holes for ventilation. You would find instructions for this in our last volume, where a series of articles on enlarging were included. You can easily enlarge from quarter-plate to whole-plate.

A. BRAINE.—Many thanks for print, which we may use.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction o buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* 1*s.*

PAYMENT.—*All payments are to be by cheques or Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.**, *or a commission of* **2½ per cent.**, *upon the sale price of the apparatus.*

Background.—For sale, backgrouud, interior, new, very cheap.—James, 10, Mount Street, Camberwell Gate.

Bicycles, Tricycles, etc. — Diamond-frame, cushion-tyre Safety for disposal, ball bearings, perfect condition, only new short time back, nickel-plated, accept £6 7s. 6d. for immediate cash, rare bargain; approval; satisfaction certain.—T. W., 6, Tower Street, Ipswich.

Cameras, etc.—Lancaster's quarter-plate Le Merveilleux, with chemicals, complete, bargain, 22s.—Mapleston, 95, Lordship Road, Stoke Newington, London, N.

12 by 10 camera by Perken, Son, and Rayment, long extension, double swing back, all movements, three double dark slides with carriers down to quarter-plate, cost £17, will take £8 10s.—A. W. Dron, Dyne Road, Brondesbury, N.W.

Lancaster's half-plate Instantograph camera, perfect, 25s.; exchange.—George, 55, Percival Street, Clerkenwell.

Cameras. Lenses, etc.—Kodak, 7 by 5 folding 1891, no film, perfect condition, £9; Thornton-Pickard camera, half-plate, first quality, revolving back, also front, all possible movements, turntable three-fold tripod, three slides, cases, cost £14, perfect condition, 9 guineas; Optimus lens, 39s.; Kennett tripod, cost 25s., sliding legs, 9s.—Herbert, Hotspur Lodge, Shepherd's Bush, W.

Half-plate bellows extension camera, complete, with portrait combination by Ross, four double dark slides, sacrifice cash £2.—A. W., 30, Regent's Street, Kennington Road, S E.

Lancaster's Merveilleux quarter, complete, case and 5 by 4 R.R. lens, 30s.; Talmer hand, covered, 25s.; both good condition.—Wilson, 147, Grove Street, Liverpool.

For sale, photographic apparatus, good lenses; apply for particulars. — Lillington, High Street, Thame.

Dark Slides, etc.—Dark slides: six half good Instantographs, 6s. 6d. each; sent for approval.—Adams, Harold Wood, Essex.

Hand-Cameras, etc.—A good quarter-plate Griffiths' hand-camera, rapid rectilidear lens, three double backs, new last Christmas, price 15s.—Apply to H. Arrowsmith, Hadley Hurst, Polegate, Sussex.

Hand-camera, suit lenses 5½, three best double dark elides, and best leather case, lock, 20s. cheap.—H. Cooke, Weekday Cross, Nottingham.

No. 2 Kodak, cost £7, in perfect condition, complete with leather case and 30 exposures, will take £5 cash.—Parker, chemist, Scarboro'.

What offers? Hand-camera, Lancaster's Rover, holds 12 quarter-plates, new last season.—D. Hendry, 23, Sandgate Street, Ayr.

Fallowfield's Facile hand-camera, £2 10s.; lens, fine definition, 12 sheaths, quarter-plate.—Robert M. Jones, 98, Tweedale Street, Rochdale.

Rouch's Eureka detective quarter plate, takes 12 platee or films, list price £6 12s. 6d., only £5; also Shenstone's enlarging apparatus, only once used, list £5, would take £3 10s.—No. 317, office of this paper, 1, Creed Lane, E.C.

Griffiths' guinea hand-camera, with finder, price 12s., finder cost 5s.—R. Frost, Railway Hotel, Martin Street, Stratford.

For sale, Chapman's British band-camera, Miller's patent, new this season, carries 12 plates in sheaths 4 in. by 5 in., Wray's R.R. lens, rotating stop, Thornton shutter, two finders, focussing, leather bound, size 5¾ in. b y 7½ in. by 10¾ in., cost £8, will take £5 10s.—S. B., Hawthornden Manor, Uttoxeter.

Kodak, No. 3 regular, just bought, morocco with black leather case, spool of about ten quarter-plate lengths film, cost 8 guineas, owner has no use for it having larger one, selling at £7, bargain.—T. Butler, Olton, Birmingham.

Shew's Eclipse 5 by 4, with 6½ in. lens, focussing flange, Eastman rollholder, three double film slides, finder, etc., in solid leather case, just new, cost £11 17s., for £9, a bargain.—B. Boothroyd, Southport.

Gennine bargain. Companion hand-camera, 12 quarter-plates, automatic changer, sunk finder, time and instantaneous shutter, eplendid R.R. lens, rotating stops, good condition, cost £5 5s., take £2 10s., lens alone worth more; dishes, etc., at one-third cost.—McLeod, Victoria Chambers, Plymouth.

Quarter-plate Dispatch hand-camera by Stereoscopic Company, six double backs, Newman's shutter, cost £12 15s., equal new, 5 guineas.—B., 13, Canterbury Road, Brixton, S.W.

Lenses, etc. — Half-plate rectilinear, iris diaphragms. Black Band, 18s.; 7 by 5 R R., movable hood, Waterhouse stops, finest quality, 21s.—L., 8, Kenilworth Road, Willesden Lane, London.

A pair of stereoscopic doublet lenses for sale, price 30s.—Address, E. J. Hughes, Rose Cottage, Coniston, Lancashire.

Lancaster s whole-plate landscape lens, new, 10s.—W. R. Moore, Leigh, Lancashire.

Sets.—Quarter plate camera, six double dark slides, numbered 1 to 12, Laverne's R.R. lens, tripod, etc, price £4, a bargain.—Robert M. Jones, 98, Tweedale Street, Rochdale.

Camera, Bilcliff's first class quarter-plate, with half-plate extension, nearly uew, all improvements, rectilinear lens, Taylor 9 in. wide-angle 4 3 in., landscape 6 in., instantaneous shutter, tripod, etc.. all superior condition, good results, £13, cost £24, bargain.—Wood, 42, Cornbrook Park Road, Cornbrook, Manchester.

Half-plate Instanto set, good as new, cost 84s., bargain, 67s. 6d.—Merrett, Russell Street, Stroud.

Burr's 12 by 10 Euryscope, 10 by 8 camera, with all accessories, Watkins' exposnre meter, must be sold.—Cleaton, coal merchant, Ince, Wigan.

Sundries.—AMATEUR PHOTOGRAPHER, 9 vols., 7 to 15, with indices. Offers to 14, Cedar Road, Leicester.

What offers for AMATEUR PHOTOGRAPHER, complete, March, 1880, to March 1892? Includes Wall's "Dictionary." Shutter wanted.—Benson, Marlboro' Road, Oxford.

WANTED.

Dark-room.—Wanted, Davenport's Eveready dark-room, cheap for cash.—Aston, Princip Street, Birmingham.

Dark Slides. — Wanted, Lancaster's half-plate Instantograph dark slides, cheap. — Key, George Street, Grantham.

Double Backs.—Wanted, doub'e backs, quarter Lancaster's International; approval.—Scarfe, Mandeville Road, Enfield Wash.

Exposure Meter.—Wanted, Watkin's exposure meter, in good condition; approval.—Tochatti, Thorncliffe, Saltford, Somerset.

Hand-Cameras, etc.—Wanted, good quarter-p'ate hand-camera, must be on approval, in exchange for Lancaster's half-plate Le Merveilleux, two double backs, lens, waterproof bag, and tripod, in good condition. or sell 55s.—Clegg, Guilford Street, Brierfield, Lancashire.

Lantern.—Wanted, good triple or biunial lantern, cheap, or first-class exchange.—James, 25, Brunswick Square, Camberwell.

Sets.—Wanted, Lancaster's International half-plate set, two double dark slides, good condition, must be cheap for cash.—F. Bailey, St. John's Lane, Canterbury, Kent.

Wanted, good half-plate set or battery quarter lenses; exchange capital tricycle.—Wiseman, Painswick, Glos.

Bargains in Lenses.—Ross 10 by 8 wide-angle rectilinear, rotating, fine definition, with flap shutter, £3 10s; 8 by 5 wide-angle lens, fitted rotating stops, *f*/16, rapid rectilinear, best condition, take 27s.; Ross' whole-plate rapid symmetrical, Waterhouse stops, works *f*/8, £4 12s. 6d.; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; whole-plate Suter No. 3, landscape rotating stops, about 12 in. focus, quite new, 37s. 6d., lowest; half-plate Dallmeyer rapid rectilinear, quite new, iris stops, movable hood. £4 17s. 6d.; half-plate wide-angle rectilinear, by Spicer Bros., fitted rotating stops, fine definition, as new, 27s. 6d.; cabinet portrait lens by Cox, rack focussing, Waterhouse stops, finest order, take 25s.; Mayfield's 7 by 5 rapid rectilinear, Waterhouse etops, covers well, 32s. 6d.; Wray's landscape, casket lenses, 5 in., 7½ in., and 10 in. focus, iris etops, quite new, £3 17s. 6d.; half-plate Lancaster's Instantograph lens, iris stops and instantaneous shutter, as new, 15s.; Lancaster's half-plate wide-angle lens, rotating stops, take 10s. 6d.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Rayment, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Cameras! Cameras! Cameras! Lenses! Lenses! Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, Corner Leadenhall Street, City (late Goy's Medium).

Bargains in Hand Cameras.—Adams' Ideal hand-camera, carries twelve quarter-plates, finest rapid rectilinear lens, two finders, etc., as new, £5 17s. 6d.; Stienheil hand-camera, 9 by 12 centimetres, rapid rectilinear lens, two finders, shutters, carries twelve plates, bag changing, as new, take £4 10s, cost £10 10s.; Luzo hand-camera, by Robinson, Regent Street, carries 100 films, rapid rectilinear, finder, as new, in leather case, take 40s.; Optimus detective camera, by Perkeu, Son, and Rayment, Optimus rapid rectilinear lens, carries six ¼-plates, covered black leather, take £4 4s.; half-plate Rover, by Lancaster, quite new Iris stops, all same shutter finder, leather case, take £3 17s. 6d.; Optimus magazine hand-camera, carries twenty-three quarter-plates, fitted Euryscope rapid rectilinear lens, instantaneous roller blind shutter, two finders, as new, take £5 15s.; Lancaster's Omnigraph, covered leather, good lens and shutter, take 17s. 6d.; and another, 15s.; No. 1 Kodak, as new, rapid rectilinear lens, instantaneous ehutter fitted, 50 films, covered leather, in case, take 42s.; Griffiths' quarter-plate magazine hand-camera, carries twelve plates, changing bag, good lens, finder, etc., 22s. 6d.; Samuel's quarter-plate hand-camera for twelve plates, quite new, rapid rectilinear lens, two finders, 32s. 6d.; Ariel hand-camera, Shew's eclipse pattern, leather bellows, quarter-plate, rapid rectilinear lens, rotating stops, Kershaw shutter, three patent Turnbull slides, quite new, take 57s. 6d. All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

Bargains in Cameras and Sets. — Optimus whole-plate camera, leather bellowe, revereing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterhouse stops, Thornton-Pickard ehutter, three double dark slides, three-fold stand and case, £11 5s.; whole-plate Underwood instanto, wide-angle movement, leather bellows, double extension, rapid rectilinear lens, iris etops, fine definition, double slide, half-plate carrier and folding stand, as new, take £5 15s.; whole-plate camera by Hare, grand article, leather bellows, double extension, wide-angle movement, double slide, changing box, for 24 plates, also changing slide, Optimus rapid rectilinear lens, Waterhouse stops, brand new three-fold stand and case, take £10 17s. 6d.; half-plate camera by Middlemiss, all latest improvements, their double slides, fitted fine rapid rectilinear lens, Waterhouse stops, three-fold stand and case, take £6 6s., worth £10 10s.; half-plate 1891 Instantograph camera, all latest improvements, Instantograph lens, iris etops, shutter, double slide, folding stand and case, take 72s. 6d., as new; half-plate Duchess camera, all latest movements, etc., Optimus rapid rectilinear lens, fine definition, Thornton-Pickard ehutter (time and instantaneous), two double slides, three-fold stand and case, as new £7 5s.; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; quarter-plate special patent, brass bound, conical leather bellows, fitted four single slides, really good lens, folding stand and case, lowest 37s. 6d.; quarter-plate Underwood's instanto, finest order, changing box for 12 ¼-plates, good lens, rotating stops, one slide, folding-stand and case, 35s.; 1891 Instantograph camera, lens, shutter, slides, and folding etand, 32s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

GOOD OPPORTUNITY FOR AN AMATEUR desirous of commencing Business; capital required, £400. Business in large provincial town, returns £400; handsome shop and studio; all apparatus and requirements; carried on by a lady at present; good reason for disposal.—Apply, Reflex, office of this paper, 1, Creed Lane, E C.

FOR SALE, PHOTOGRAPHIC STUDIO, in Savile Road, Dewsbury, 20ft. by 10ft., north-east light, can be used either end; curtains for top and side, dark-room 8ft. by 4ft., and small room for dressing, etc. Dimensions over all, 20ft. by 14ft. Also backgrounds, pedestal, and balustrade, 8 by 6, camera with stand, 9in. portrait lens, by Burr, London. Burnisher, show case, small table, developing traye, dark slides, etc. Dark-room fitted up for enlarging. Ground rent low; £25 the lot. Splendid opening for energetic man, or can be used as a branch studio.—Apply S. Mitchell, dentist, Bradford Road, Dewsbury.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 409. Vol. XVI.] FRIDAY, AUGUST 5, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Monday Afternoon "At Home" is discontinued for the present, but will be resumed on Monday the 5th of September.

Our Views.—Announcement—Holidays with the Camera Competition—Our 1892 Annual Lantern Slide Competition—Dark-room at Llandudno—Loaning of Prints and Slides—The Convention Hand Camera Division.

Letters to the Editor.—A Correction (Perkins)—The Blister Fiend (H. S. Large)—One Good Use for Spoilt Plates (S. E. Venn).

Leader.—Bromide Paper.

Articles.—General and Photographic Chemistry (Conrad)—The Photographic Convention: Deficiencies in the Training of Photographers (Howard Farmer)—How to Make a Set of Photographic Apparatus (H. J.)—Photography by Rule (Bedding)—Notes on Professor Armstrong's Paper, "The Theory of Development (Elder)—Film Enlarging by Cresco-Fylma.

Societies' Meetings.—Aberdeenshire—Cleckheaton—East London—Hackney—Liverpool Camera Club—Liverpool.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months,	5s. 6d.	 Twelve Months,		10s. 10d.
Postal Union	,,	,,	6s. 6d.	,,	,, 13s. 0d.
Out of Postal Union ..	,,	,,	7s. 9d.	,,	,, 15s. 3d

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 39.—"Sea Pieces or River Scenery." Latest day, August 22nd.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, September 16th.)

We wish to draw the attention of our readers to the following announcement:—

In no case will the Proprietors of the Amateur Photographer undertake to buy or sell any goods on commission, nor will they be responsible for the safety of any negatives or prints sent to the Editor of the Amateur Photographer for any purpose whatever, although all reasonable care will be taken of the same.

The Editor claims the right of refusing any print, lantern slide, etc., sent in for competition, without assigning any reason for such refusal.

Our annual "Holidays with the Camera" competition closes, as announced last week, on the last day of this year, and the following are the rules and conditions:—

Prizes:—Gold, Silver, and Bronze Medals, and Certificates, with special prizes of "Niepce" or progressive medals for past prize-winners.

Subjects.—All photographs are eligible that have been taken during the "holidays," but must be landscape or sea pieces with or without figures, views of towns, photographs of cathedrals, churches, public buildings, etc., but not portraiture, figure study, or pictures which could be classed as "Photography at Home." The prize pictures will become the property of the proprietors of the "Amateur Photographer;" other photographs will be returned if stamps be enclosed to cover postage.

Number.—Not more than twelve or less than six prints are to be sent in. They must all be mounted and numbered to correspond with the numbers in the MS. They will be judged upon their merits as a whole.

Descriptive Notes.—Each competitor must contribute a short account of his holiday, to be not less than 500 or more than 1,000 words.

Date.—All photographs must be received on or before the 31st December, 1892.

As this may practically be considered the commencement of the holiday season, we trust many of our readers will not forget our competition during the holidays, and try and send us some excellent work. Prizes cannot, unfortunately, be awarded to all, but open competitions are extremely good educating means for workers, by seeing how they stand with regard to fellow-workers.

As we have already announced, the Amateur Photographer 1892 Annual Lantern Slide Competition closes on September 30th, and we shall be glad to receive applications for the same from the Secretaries of societies as early as possible. Unfortunately, last year considerable disap-

pointment was caused by certain societies not receiving the slides in time for the appointed exhibition. We hope to obviate that mishap this year, by limiting the number of exhibits in each week to three—so that if shown on a Monday they will not be shown again till Wednesday and then Friday.

We also intend having a special case made for them of much lighter construction than last year, and thus hope to be able to save some of the carriage, which in some cases was very heavy.

Form of application for the slides will be forwarded to the Secretary of any photographic society on receipt of stamped addressed wrapper; in all cases Secretaries are requested to give three optional dates. The following are the rules on which the slides are loaned:—

1. A booking fee of one shilling must accompany every application.
2. Carriage both ways to be paid by the applicant (except as provided in No. 4).
3. All loaned lantern slides to be returned, or forwarded, as advised, the day after exhibition.
4. The loaned lantern slides must be returned to the head office, 1, Creed Lane, Ludgate Hill, E.C., or forwarded to such address as may be advised, in the latter case the consignee will pay the carriage.

We publish on this page a note from a correspondent as to the completion of a dark-room at Llandudno, which will, we are sure, be useful to those who may be visiting there this summer. We shall always be glad if any of our readers will kindly inform us of any dark-rooms they may discover or hear of. Our "Holiday Guide" in the "Annual" contains a great many dark-rooms, but as we desire to make it still more complete and comprehensive for next year, we shall be glad of any notes or information of places not mentioned there.

Photography is becoming every day more recognised as one of the hobbies and amusements which should be popularly supported by prizes and medals. It is unusual to see a flower show, or, in fact, any exhibition that has not a class or classes devoted to photography. The annual flower show of the Hendon Parish, Sunderland, which will be held at the end of this month, has two classes, but both are confined to local workers. We shall always be pleased at any time to assist such exhibitions by loaning lantern slides, or prints for the decoration of the rooms, etc.

Mr. Welford is desirous of arranging a friendly informal meeting in London, of the hand camera division at the Convention, to show results, compare notes, and quiet chat. Anyone interested in the hand camera work is cordially invited. Those workers who can attend on or about Wednesday the 10th inst., and who can bring prints from their negatives, are invited to drop a post card to 47 Hagley Road, Birmingham. The gentlemen (or ladies) who secured shots but are unable to attend are invited to forward the prints to Mr. Welford, who will take charge and show them. Exact date, time, and place will be sent to each one direct by post.

Amateur Photographic Association.—The annual meeting of the council of this society was held on the 27th ult., at 58, Pall Mall, his Highness the Duke of Teck in the chair. The pictures contributed by the members for the current year, which had been arranged and classified by Mr. Glaisher, vice-president, were examined; and prizes, consisting of silver goblets, pictures, albums and medals, were awarded to Viscount Maitland, Vicomte de Cordeixa, Mr. R. O. Milne, Mr. Hobson, Mr. Stephens, Mr. Murray, Mr. Leventhorpe, Mr. de Dechy, Mr. Cohen, Mr. Dresser, Mr. Harrison, and others. Mr. Melhuish, the hon. secretary, stated that never before had so large a number of pictures ranking in the "first class" been contributed.

Letters to the Editor.

A CORRECTION.

SIR,—Will you kindly allow me space to point out as an inaccurate statement in my article on "Architectural Photography" in your recently issued "Annual," which I became conscious of having made only after correcting the proof sheets. On page 112 I speak of the sun being, roughly speaking, due east at six a.m. I should have said midway between north and south, measured along its own daily path, and since this is not even approximately parallel to the horizon, save in the neighbourhood of the poles, this point is not above or below the eastern point of the horizon; in fact, only twice during the year will the sun be in the east at six a.m.; from the vernal to the autumnal equinox it will be to the north of east, and during the other half of the year to the south of east; the exact amount of this variation depends on the latitude and the time of year. The result of the obliquity of the equator to the horizon will be that in England the sun will rise rather more to the north of east in the summer than I stated.—Yours, etc., T. PERKINS.

* * * *

THE BLISTER FIEND.

SIR,—Without my being deemed presumptuous may I be allowed to say a few more words? It is entirely our own fault if we now get blisters on albumenised paper, for the fiend can be perfectly "spirited" away. It is a most complete preventive, and if used as set forth in your issue for 8th July, the same spirit will answer over and over again, used in a cleanly way. In saving prints it pays for itself many times over, and no other preventive need be used. I am very sorry to pick a bone with "The Baron," but I must say, for the good of photography, that his advice is anything but thorough, and it would not be fair business to palm off prints afflicted with (to him) hidden blisters. Let him try some printing for the trade, and he will soon find they have got splendid eyes; and I wonder if he has ever properly burnished such prints, and yes or no, the blisters are there, and in not a very long time will show where, by the colour fading before it does on the other parts of the print, firstly because the surface is unequally supported, secondly because those parts where are the blisters cannot be so thoroughly freed from the chemicals as the surrounding parts. The blisters with which I was troubled are those known by some as "blebs," varying from the size of a threepenny piece to that of a large filbert. But by using methylated spirit, blisters are quite done with; therefore why neglect a remedy so simple, certain, and saving?

If you think fit to print the directions once more, here they are. First wash out the free nitrate as usual in water, then tone, then wash for say seven minutes in gently running water, now immerse one by one in pure spirit for five or ten minutes (according to the number of times it has been previously used), then with one hand take them one by one out of the spirit, using your other hand for putting in the fixing; you will thus keep the spirit from getting contaminated with hypo; let them remain the usual time, then wash two or three hours in running water, and the manipulation is perfect.—Yours, etc., H. S. LARGE.

Llandudno.—Photographic dark-rooms for the use of visitors to this favourite watering-place are now completed, fitted up regardless of cost, with every latest improvement, well ventilated and lofty. Accommodation is provided for three to develop at one time, and the fittings include large fountain, rose taps, brilliant Argand gas lamps, roomy sinks, developing trays from quarter-plate to 15 by 12, glass measures, hypo dishes with *fresh* solution ready for use, negative washing tanks with a constant stream of water, drying shelves, roomy lock-up cupboards for holding cameras, plates, negatives, or any other article an amateur may wish to lock up, and the key of which is in his possession (every cupboard has a different lock and key); each room has a large window so that the heat of gas is avoided in the daytime. Two Aptus, white, self-lighting gas burners are fitted, so that lantern-slides or bromide prints may be made at any time. Plates of all sizes, and fresh from the makers, pyrogallic, ammonia and hydrokinone developer (two solutions each) can be obtained at the rooms, which are open from 9 a.m. to 10 a.m., and an attendant is constantly on the spot. The rooms are situated in the most central position in Llandudno, viz., in the gallery of the market hall, Gloddaeth Street, exactly opposite the general post office. Arrangements have been made by which the Llandudno Camera Club will make these rooms their head-quarters, and the Hon. Sec. will be most happy to give intending visitors any information respecting this most beautiful locality on their writing to him, care of the rooms as above.

BROMIDE PAPER.

II.—DEVELOPMENT.

To DEVELOP, it is essential that we should have a developer, and, as already pointed out when treating of the development of enlargements, it may be either ferrous oxalate, hydroquinone, or eikonogen. Of the three, the last is our favourite, but as others use ferrous oxalate we will consider it first.

The Ferrous Oxalate Developer. — Actual formulæ for this have already been given (page 464). We now come to the modification of the developer to suit the negative; we will again take our three typical negatives, thin, normal, and hard. For the thin negative wanting in contrast, we mix our developer in the proportion of 1 of iron to 5 of potash, and add 5 drops of a 10 per cent. solution of bromide of potassium, and flooding the print with this allow it to act till development is complete.

The normal negative requires slightly different treatment; in this case it is far preferable to reduce the quantity of iron and bromide, using on the whole one part of iron to six of oxalate, and adding merely one drop of bromide solution.

For the extra hard, full-of-contrast negative we work quite differently. We mix one part of iron to four parts of oxalate, and add one drop of bromide, and flood the print with this and rock the dish, and allow the picture to come up, which it will do without harsh contrasts. Or another method of working this class of print is to add one part of iron to twelve parts of oxalate, and a drop or two of bromide, and patiently rock the dish to allow the whole of the image to come up, and when all detail is out, add five drops or even more, and two more parts of iron, and allow the image to gain density.

Dr. Vos has another method of treating prints, which we give in his own words:—

"MODIFICATION OF IRON DEVELOPMENT.—It is generally said that iron development cannot be controlled, but I maintain that it can be, and remarkably so, *if the iron be added little by little.* Suppose, for instance, that I have printed from a thin negative, which will be likely to be too much exposed, I proceed thus: Say I am developing a quarter-plate print; one ounce of developer is sufficient. I first measure out two drachms of the iron into a small phial of that capacity, the maximum dose that I can employ with one ounce of oxalate. I then put into the developing glass the ounce of oxalate, then the two drops of bromide, and lastly (important) only a sixth or a fourth of the iron, shaking them up thoroughly together. After a short preliminary soaking of the paper in plain water to ensure the developer acting regularly, I pour on the mixed developer. Details will come up quite slowly, and if the picture hangs fire, and will not develop up to brilliancy, I add a few more drops only of iron. This will start it afresh, but most likely the extra drops will not be required. To ascertain if the print be developed up to proper density, hold it to the developing lantern and view it by transmitted light. I can now wait until all details are out, and no staining will take place of the paper, even if the development be prolonged, provided that your developer be just acid, and provided, too, that you take care to wash thoroughly with acidified water (acetic acid is best for this) before fixing. Omit this and your prints will be stained yellow when finished. For washing I employ three changes of acidified water, and give a good final rinse with plain water. The *time* the prints wash in this is more important than the *number of changes* you give. I allow about half a minute washing with each change. After the first washing with acid water you can work with yellow light without any fear of fog, and I would also mention that bromide paper—my Eastman's, at any rate—can be developed close up to a lantern guarded only by a single sheet of ruby glass. Mine has a bright gas flame in it! I never have fog. While the details are coming up, say in a view, the foreground may get a bloom-like deposit of lime (?) on it, whilst the distance (which is generally the denser in a negative) is coming up. This bloom will fix off instantly in the hypo. After prolonged iron development, when the print is fixed and dried, deposit marks will probably be seen on the surface of the print by reflected light. These marks will not be noticeable unless the print be held and viewed aslant. They may, however, be removed by weak hydrochloric acid and a piece of cotton wool rubbed lightly. I would mention that this tentative method of iron development can also be used for plates. The marks on the dried negative can also be removed by hydrochloric acid. Both with prints and negatives it is better, perhaps, to employ this weak acid with cotton wool, when thoroughly washed after fixing, to ensure them having a bright surface. It is important that the hydrochloric acid water be very weak—just acid to the taste or a little stronger—otherwise the depth of the negative or print will be destroyed and the fine detail eaten away. It will be found that the second and third and fourth print or negative developed with the same one developer will each succeeding one be more marked thus when finished than the first one, which will be scarcely marked, especially if development has been rapid. This is due to the iron becoming more and more oxidised by contact with the air. The developer, too, will probably be found to be getting somewhat thick. Now, after developing the first print, if I have next to develop a print from a thin negative, I would add only a few more drops of the iron. In this way I have used only half the whole allowable quantity of iron for several prints, allowing the iron to exercise its full effect, and getting well deposited to blackness in each print. If the exposure be correct, the print will not develop to more than a certain blackness, especially so if under-exposed. The exposure estimated by my opal glass method is a little more than the exact exposure. If you add the whole of the iron all at once, with a print from a thin negative, the whole picture is likely to cloud over. Now, for developing a print from a negative with some density, you can commence with as much as half of the iron at once; indeed, the picture will require it, if the negative be dense, to fetch up details at all. By this method of adding the iron by degrees it is the *oxalate* that at last gets used up, not the iron, until at last—up to six prints, about—the developer is effete, and fresh must be made up. Of course, as each succeeding print (or plate) is developed with the same developer, the action gets weaker, because the constituents are more diluted, part of them having been worked out from the solution. If you develop a print from a *dense* negative first, and have added, say, half the dose of iron, and you next develop a print from a *thin* negative, be careful not to add more iron until you have seen the effect on the picture. You can also slow iron development by diluting your oxalate solution, also by diluting your iron; but in these cases exposure must have been longer, and you must give plenty of time for density to come up; the result is as good in the end, though the dried print will be more marked than ever. If you have only one print to develop it is useful to thus dilute your solutions, so as to save using so much of the oxalate and the iron. Diluted solutions, too, will save a print or plate that is *known to be over-exposed.* Slowing in this case can also be done by the slow addition of iron, which is the best method—I think a better than adding more bromide, for if bromide be added it exerts such a checking action as to absolutely keep back the details in the higher lights, however much you may develop; but with the tentative method the details will at last come up, unless the exposure has been too short. The solutions in the case of diluting will be somewhat thick, but this will not matter with prints provided there be no positive precipitation of the iron. For negatives, however, never use diluted developer; they will veil over. Again, you can get a perfect print even with a solution of oxalate that has too much iron in it and that *has* deposited a precipitate. But before fixing rub it well over with acidified water and a piece of cotton wool, giving it also a prolonged washing in the acid water, and the whites in the paper will remain pure in the finished picture, but it is risky. The dilution with water seems to oxidise the iron by the oxygen that the water contains, and so renders the mixture muddy. If with diluted developer the development be not well pushed, the print after fixing will be of a brown colour and unpleasant to look at. I would mention in passing a means of avoiding air bubbles on bromide prints or glass negatives. The usual advice is to employ a camel-hair brush, but if you give the paper or the plate a preliminary minute of soaking in water before developing, and agitate them when immersed violently for a few seconds from side to side against the sides of the developing tray, no bubble will remain. I never have a bubble by any chance by this means. Now, as to fixing. I use generally only 4 oz of hypo to the pint; prints (or plates) left in this even for an hour will not harm, though in a stronger fixer they would be materially injured. In fact, you need not employ more hypo than just the quantity required to fix out the unaltered bromide of silver in the print (or plate), or a slight excess for safety. What is the exact proportion of hypo required to fix a certain amount of silver I do not know. If a small quantity of hypo be used for fixing, of course the process will take a longer while, and you should leave the prints (or plates) in the fixer for many minutes, and after in the case of negatives all the white bromide of silver has disappeared. You can save your hypo, though, considerably by this means, suppose you wish to fix only one or two prints or negatives. Another point in iron development is to work with clean dishes, glasses, bottles, etc. I always keep some strong sulphuric acid by me, and also a mop fixed on a piece

of wood, and if the developing glass, or tray, or bottle have any deposit of iron on them I pour in a little of the acid, fill up with water, and mop out, and finally rinse. This little extra is not much trouble, but is most important for clean work with iron development."

HYDROQUINONE DEVELOPMENT.

We do not like hydroquinone as a developer for bromide paper. It either has a tendency to block the shadows greater than iron, or else gives rusty prints, and when a caustic alkali is used frequently causes a metallic and iridescent fog, which degrades the whites.

To modify this developer is as easy as with iron. Increase of bromide means increase of contrast; lessening the bromide and increase of the alkali means lessening the contrast, and the same effect may be obtained by diluting the developer, and no further notes are required after the development of enlargements has been read.

EIKONOGEN DEVELOPMENT.

The developer we use is Dr. Stolze's, given on p. 484, and this is modified in the following manner. For thin, weak negatives the quantities should be 7 parts of A, 2 parts of B, and 15 parts of water; for normal negatives, 5 parts of A, 2 parts of B, and 18 parts of water; for harsh contrasts, 5 parts of A, 4 parts of B, and 22 parts of water. Bromide should not be used, or rusty tones will be given.

It was our intention to treat of the clearing and fixing of prints, and to conclude with some general observations, but we think we have sufficiently considered the remaining elements of success in talking about enlargements, to which articles the reader must refer.

General and Photographic Chemistry.

BY E. C. CONRAD, F.C.S.

INTRODUCTION.

PHOTOGRAPHY is the art of obtaining the representation of objects by the agency of light upon sensitive substances. Photography requires at every stage, and in all its branches, the use of certain chemical compounds, and it is to a consideration of these, their preparation or method of manufacture, properties, &c., and especially their uses in photography, that we propose more particularly to devote ourselves, but to make their relationship plainer and these articles more generally useful, we have included several substances that are not at present directly employed in the art.

Before commencing a consideration of these substances it will be well to state and explain both the general laws and terms used in connection with chemical science.

GENERAL LAWS AND TERMS.

Chemical Compounds and Mechanical Mixtures.—Powdered iron and sulphur can be mixed together very intimately, but no matter how small the individual particles may become, they still remain iron and sulphur, and can be seen as separate grains by a microscope, or the iron separated by a magnet. They are merely mixed, and can be separated by mechanical means; each particle has its separate and peculiar properties. If the mixture is heated, the physical properties are entirely changed, the individuality of the iron and sulphur is lost, and their presence can no longer be detected, nor can they be separated by purely mechanical means. They form a chemical compound.

Laws of Chemical Action.—Chemistry being an exact science is governed by fixed laws, of which the most important are: (1) Chemical combination is always accompanied by an alteration in the physical properties of the constituents; and by a change of temperature some combinations produce cold and some heat, often to a marked extent. (2) Any chemical action taking place under any conditions, can always be relied upon to take place to exactly the same extent under the same conditions. (3) A variation of the conditions produces a variation of the result.

Elements.—Chemistry embraces a consideration of the composition of every substance in existence, and it has been found that it is possible to reduce all these to some sixty-three elementary bodies; that is, substances that cannot be, as far as we know at present, split up into any simpler form.

Symbols.—To facilitate reference, and to enable the action of these elements to be explained concisely, chemists have introduced a system of shorthand in which every element is represented by a symbol or sign; such symbols are often the first letter of the English or Latin name of the element itself. When it happens that the names of other elements commence with the same letter, another is used in conjunction, the first letter in all symbols being a capital, the other a small one.

Atoms.—The smallest obtainable division of an element by chemical means is called in chemical philosophy an atom, and is supposed to be incapable of existence by itself.

Molecule.—A group of atoms, or the smallest obtainable division of an elementary body by mechanical means, is called a molecule, and is capable of independent existence.

Atomic or Combining Weight.—The atoms of all the elements have a fixed weight or value expressed in proportions of hydrogen (the lightest body known). This weight is called the atomic weight of the element, and is understood to be represented whenever the symbol of an element is written.

All the elements unite together in the proportion or multiple of their respective atomic weights. Example: The gas oxygen has the atomic weight of 16, and whenever it enters or leaves a chemical compound it is always in this ratio—as 16 or 32 or 48 or 64, &c.

The atomic weight of a compound is the total weight of its elements.

Chemical Formulæ.—When a compound or union of one or more elements has to be represented, the symbols of its elements are written one after the other, forming what is called a chemical formula. Example: The compound called silver chloride or argenti chloridum is represented by AgCl, and this formula means that one combining weight of the metal silver (=108) is united with one combining weight of the gas chlorine (=35·5).

Chemical Nomenclature and Equations.—To explain the action of the elements or their compounds on one another, some mathematical signs are used, viz., + plus or added to; = equals or balancing; — minus or subtracting; and these signs, with the symbols of the elements or compounds, make up what is called an equation. Example: Two parts or atomic weights of the gas hydrogen (=1) unite with one part or atomic weight of the gas oxygen (=16), to form the liquid water, and this action is expressed by the following equation, $H_2+O=H_2O$ (2+16=18). It will be noticed that the sum of the atomic weights on each side of the balancing sign are equal, and this is always so in all correctly written equations. Small figures written after a symbol and below the line show how many atomic weights of that element are included. Large figures written in the same line as the symbols multiply all the symbols following after it up to a sign or full stop. Example: Calcium nitrate has the formula $Ca2NO_3$, in which the 2 multiplies both the nitrogen and oxygen, whereas the 3 only multiplies the oxygen, the whole formula showing that one combining weight of

calcium is combined with two of nitrogen and six of oxygen.

Brackets.—The nitrogen and oxygen in the above example could be written in brackets (NO_3), in which case the figure multiplying them could be placed before or behind the bracket; above, on, or below the line.

Radicals.—Groups of elements which enter or leave combination together are termed radicals, but as this term could be applied to the elements themselves, it is usual to speak of groups as compound radicals, and if they originally existed in combination with hydrogen as acids, they are spoken of as acid radicals.

Atomicity, Valency, Equivalence.—The elements can be arranged and named according to the number of atoms of hydrogen they are equal to or can replace under favourable conditions. These values can be shown by placing dashes or Roman numerals over the symbols to show their respective values.

The following are the terms employed, with examples of each class :—

Monads, or monatomic, equal to one equivalent or combining weight of hydrogen H′, Cl′, Ag′.
Dyads, or diatomic, equal to two equivalent or combining weights of hydrogen, O″.
Triads, equal to three equivalent or combining weights of hydrogen, Au^{III}.
Tetrads, ,, four ,, ,, ,, C^{IV} or ^{IIII}.
Pentads, ,, five ,, ,, ,, N^{V}.
Hexads, ,, six ,, ,, ,, S^{VI}.

Graphic Formulæ and Bonds of Force.—To show the composition of complex compounds, it is sometimes advantageous to write the elements composing them with their valency expressed by imaginary lines, called bonds of force, and such a representation is called a graphic formula.

Thus the action of potassium on sulphuric acid and the resulting compounds can be expressed as follows :—

Sulphuric Acid, H_2SO_4.	Hydropotassic Sulphate, $HKSO_4$.	Potassium Sulphate, K_2SO_4.
O	O	O
‖	‖	‖
S<O—H, O—H	S<O—K, O—H	S<O—K, O—K
‖	‖	‖
O	O	O

The sulphur being a hexad is represented with 6 bonds.
The oxygen ,, dyad ,, ,, 2 ,,
The potassium and hydrogen being monads are represented with 1 bond each.

It must be distinctly understood that these so-called bonds of force have no actual existence, and are only used to express an energy or quality of which we know nothing, except its results. Many of the elements form compounds of different atomicity; for instance, phosphorus and arsenic sometimes combine as triads and sometimes as pentads; and lead sometimes as a dyad or tetrad. This difference of behaviour is to be accounted for on the assumption that a pair of these bonds of force are latent or perhaps combined together in the compound of lower atomicity. As they always appear or disappear in pairs, it follows that an element that forms fully saturated compounds of high atomicity may also form compounds of less atomicity differing from one another by two or more equal numbers of powers. Thus a hexad may act as a tetrad, or even a dyad, but not as a pentad, triad, or monad.

Chemical Affinity.—The quality or force which brings about the combination of the elements and governs its extent is called chemical affinity.

Analysis—Qualitative and Quantitative.—In order to determine the composition of a compound, it is often necessary to decompose or reduce it into its elements or some simpler compound; such a process is called an analysis. If it is undertaken to determine the substances present, it is called a qualitative analysis. If to determine their proportion or quantity, it is spoken of as being a quantitative analysis. It is usual to express the results of an analysis in percentage of composition.

Synthesis.—Instead of separating a compound, it is often possible to cause it to combine with some other element or compound; such an operation is called a synthetical process.

(*To be continued.*)

The Photographic Convention.

DEFICIENCIES IN THE TRAINING OF PHOTOGRAPHERS.

By Howard Farmer.

Early Guidance.

When it is known in the early life of a lad that he will probably become a photographer, his training should commence during the latter years of his school life. His studies can then be guided in directions which in after years will be directly useful to him in his professional capacity, and he will acquire knowledge rapidly that may later save him much labour and effort.

Where this has been done it will generally be found that the directing parent has been a photographer or connected with photography, and in such cases the same forethought which has guided these early studies into useful channels has probably continued this direction to a successful *dénouement*.

Importance of Continuity.

But the majority of those who become photographers have their career decided after leaving school—sometimes a good many years afterwards—and it is to these my remarks more especially apply. As an example we may suppose a lad has left school, and not until he has subsequently spent a year or more in holiday-making is the important decision made as to what his life's work shall be, and steps are taken to start him on his career.

Now, while the whole of our sympathies may go to aid the lad's pleasures in the heyday of his youth, the stern competition of life enforces the doctrine that this, the most valuable portion of his life from an educational standpoint, must be utilised to the utmost, and in doing this there is no need to deprive him of his pleasures, but they must come in as a complement forming natural divisions to his work.

It is well known among teachers that the assimilative power for new knowledge usually falls off very much after the age of twenty or so is reached. This is especially the case when a lengthy gap or interval has been allowed to occur in the training; and a mass of evidence to support this occurs with photographers in the very small proportion who, however hardly they may be pressed, attempt even to increase their knowledge; and the steadfast application required from those who do. It is not too much to say that, independent of the inferior value which knowledge acquired at the age of twenty-five to thirty possesses, as compared with the same knowledge acquired at from fifteen to twenty, the labour and application necessary in its acquirement is three or four times as great at the more advanced age.

It is from considerations such as these we are forced to conclude that in allowing a lad's training to stop suddenly when he leaves school, if only temporarily, for a year, not only are the best fruits, which might readily follow from the cumulative effect of his previous training left ungathered but before he has arrived at an age when he himself may fairly be held in some measure responsible, his future status is placed in jeopardy.

Insufficiency and Uncertainty of the Apprenticeship System.

We may next suppose that the lad forming our example is apprenticed or placed to learn his trade with some firm of photographers. In accomplishing this, the parent may frequently consider that he has now fairly started the lad on his career, and, so far as any further training is concerned, leaves it to the care of his employers and the lad's own devices.

Almost universal as such a method of starting a photographic career is, the demonstrable insufficiency of such a procedure is only too complete. In the first place, the professional education, excepting so far as acquiring manipulative skill and a knowledge of some aspects of the commercial economy of the business is concerned, leaves off where it ought to begin, and, although no one will hesitate to admit the prime importance of manipulative skill and of business methods, the trained photographer nowadays requires a great deal more in order that he may attain any *status*. In the second place, even the manipulative work is confined to one or two specialities, whereas the student wants at this, the very early stages of his career,

and before specialising, trial practice in all branches. Thirdly, the skill acquired will depend largely upon the attention devoted to the student by the employer and fellow *employés*, which introduces an element of uncertainty into the training, and to which may be added the inevitable proportion of time which is wasted or during which no progress is made. There are also other reasons, which at first sight are not so obvious, why the old system of apprenticeship, which is fast disappearing in other trades, must also in photography disappear, or be largely modified and supplemented, in order that the photographer may not only acquire an honourable *status* in his profession, but also keep a distinct level above his neighbour the amateur.

TECHNICAL AND ART TRAINING—THE PRIME NECESSITY FOR.

After his training has commenced, our supposed young apprentice finds there are at least five distinct sides to his subject, as follows:—

1. The Practical or Manipulative.
2. The Technical.
3. The Commercial.
4. The Artistic.
5. The Scientific.

Each of which requires his attention in a greater or less degree depending upon the character of the work to which he intends devoting his abilities. To convey some definite idea of the average relative importance of each of these divisions, it will be necessary to consider them individually.

1. *Practical.*—The manipulative skill required for most branches of photographic work is not of a very high order; for example, the actual operations involved in the taking of a portrait or landscape negative are all of a fairly easy character, and require but little experience and practice on the part of a student to perform them with regularity and success. Notwithstanding this, the chief help which the student usually derives from his work with his employers is confined to a sufficiency of experience in these easily acquired manipulations. There is, however, one special branch of studio practice which requires a very high degree of skill, and that is retouching, and in other departments of photography, such as working large wet plates successfully, some portions of process work, and others, considerable manipulative skill is essential.

2. *Technique.*—It is not difficult to show that the main foundation of photography, as a profession, lies in its techniques.

Whether in the artistic or scientific departments, in landscape, seascape, motion, architecture, reproductions, or printing processes, the worker who is trained in either of them is the one who excels; and on examination, it is found that the success depends not so much upon any particular difficulty in performing the necessary operations as upon *a complete familiarity with the minutiæ and details of procedure*, which give the best result under particular conditions. The reason that several years' training is commonly necessary to get a full percentage of successful results in any one of them is due to the fact that the worker has not had the opportunity of learning in a systematic form the *minutiæ* and special factor which govern different classes of work, but is left like a man groping in the dark to find his way slowly and laboriously by the method of trial, and, even if he has the guidance of a fellow-worker, it is one who has found it himself by trial and experience, and can only impart it in the same manner.

Take two beginners of identical abilities, perseverance, and general education; give both the average training obtained as apprentices to a photographer, and give one of them, in addition, systematic instruction in *technique*. The latter will become as good a photographer in one year as the former will in four years, and will ultimately become a much more competent and independent worker.

3. *Commercial.*—Important as a training in commercial economy undoubtedly is, and which includes such subjects as economy of time, material and wages, value of specialism and enterprise, punctuality, tact, and politeness, treatment of employer and *employés*, accommodation to circumstances; in fact, all the *minutiæ* which together form the system of a successful business man, this side of his training is one which, in great measure, would be the same in all trades, and which therefore is rather included in his general education than in his specially photographic one. That photographers as a body are behindhand in this department of their training is, however, a fact very widely conceded.

4. *Artistic.*—The value of an art training is second to none in the whole range of a photographer's studies, as it invariably gives the stamp of superiority to his work. This is abundantly testified in public displays of photographs, where the pleasing effects in light and shade, in composition and selection produced by artistic feeling or culture deservedly take the first rank.

5. *Scientific.*—The value of a purely scientific training to the working photographer has, in my opinion, been a great deal overestimated. In the early days of the art, when the worker had to go through a series of delicate chemical processes for each photograph taken, and when the successful performance of these processes was alone sufficient to tax the knowledge and skill of one individual, it may have been true that a trained scientist was the best man. But, in these days of dry plates and ultra-simplified printing processes, photography, except in its purely scientific divisions, is being lifted above a test of chemical knowledge or optical expertness, and in taking its position as by far the most valuable handmaiden, the fine arts process must, sooner or later, be admitted into partnership with them.

The chief use of a knowledge of chemistry, molecular physics, and optics to the photographer, independent of the general educational value, lies in their giving him a clearer insight into the sciences he utilises in his work, and thereby inducing an interest in it which acts as a powerful antidote to the apathy which is so fatal an enemy to progress.

MORE CARE REQUIRED IN SPECIALISING.

Another division of his subject is recognised by the photographer more and more clearly as his work proceeds. Having probably started by associating photography with taking portraits only, he becomes conscious of fields and scope for work in which portraiture plays no part; he finds workers devoting the whole of their time and energies to landscapes, to copying, to architecture, to printing, or to process work; and even in portraiture alone he finds one worker devoting himself to operating, another to retouching, and a third to printing. He begins to realise that it is impossible for an average individual to master every branch of photography, and so it comes about that he, like the others, has to select some departments and reject others—in fact, specialise.

In doing this, he is usually guided by what he considers the most lucrative portion of the art, and in most cases portraiture seems to be chosen. It is, of course, a matter of opinion as to which branch of photography offers the most lucrative openings; but in my opinion the prospects of a landscape or general worker, or a reproductionist, at the present time, are better than those of a portrait photographer, these prospects being not so much in the silver print as in the collotype film, the copper plate, or the type block.

There are other factors also which should be considered in deciding upon the direction in which to specialise. The probationist, while it is still in his power, should be guided more by his own capacities and temperament than he is at present. If he likes indoor life and delights in the human figure, he would be unwise if he did not take up portraiture; but if an outdoor life suits his constitution and tastes, he would be equally unwise if he did not specialise in landscape or other outdoor work. For town life he must be more expert and specialistic than for country life, for which a good general excellence is better suited. And, again, according to his proclivities, he should choose the artistic or manipulative sides of his subject.

Whatever special branches he ultimately adopts, a good general and art education, and a good technical and trial knowledge of all the principal photographic processes, with their individual applications and possibilities, should form the basis of his work.

EVIDENCE OF THE PRESENT INSUFFICIENCY OF TRAINING.

Evidence of the insufficiency of the present system of photographic training is everywhere present in the extremely limited range of most workers' manipulative skill, which, while good in itself when carried to sufficient perfection and supported upon a general foundation, is frequently mere rule of thumb, so that the results are capricious, and, in taking up new processes or methods which the progress of technology or discovery may render advantageous the worker finds himself but little better than a novice; also in the deficiency of technical, artistic, and general knowledge so commonly met with, which, while it is excusable among those who, interested in photography, are not expected to know its *minutiæ*, it is inexcusable among those who are supposed by their calling to have been properly educated in the art they profess; and, last but not least, in the surprising facility with which a determined outsider will place himself on a level with workers of a lifetime.

A REMEDY.

It is, I believe, in the spread of a sound and largely extended intermediate or supplementary training to that of the school and the studio that the photographer will not only occupy an impregnable position as a specialist, but will also learn how to utilise to the *uttermost advantage* the factors and processes at his disposal, and in so doing will both kill the unskilled competition from which he in so many cases at present suffers, and will place his business on the soundest of all foundations.



Mr. F. R. Tissington is the Hon. Secretary of the Polytechnic Photographic Society, and all letters should be addressed to him at 309, Regent Street, W.C.

Mr. Michael A. Scott, of 2, Victoria Crescent, Oban, N.B, has withdrawn his dark-room from our register. Our readers will please make the necessary correction in our "Annual."

THE IMPERIAL PLATES

SPLENDID QUALITY ! POPULAR PRICES !

THOS. BEDDING, Esq. (British Journal of Photography), writes.

"I am charmed with your Plates."

Sample box of One Dozen ¼ or Half-Dozen ½ Plates, 1s., sent on receipt of remittance.

THE IMPERIAL BROMIDE OPALS.

Finest and Best. Rapid and Slow.

Same Prices as our Extreme Rapidity Plates. Sample ½ doz. ½ Plates 1/6 post free

Our Thickly Coated Landscape Series

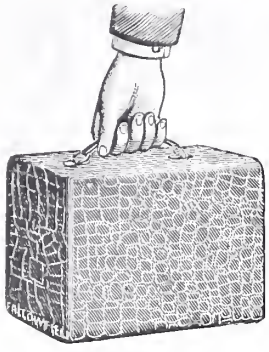
ON SELECTED GLASS.

Same Prices as our Extra Rapid Plates. Sample Dozen ¼ Plates or Half-Dozen ½ Plates 1/3 post free.

THE IMPERIAL DRY PLATE COMPANY, LTD..

CRICKLEWOOD, LONDON, N.W.

"FALLOWFIELD" HAND CAMERA



Carries 12 Plates or Films—Full Size Focussing Screen—Instantaneous and Time Shutter—RR. Lens—Iris Diaphragm.

12 more Plates can be Inserted in Bright Sunlight.

Plates can be Exposed in any Order, and Different Rapidities Carried.



PERFECTION OF ELEGANCE, WORKMANSHIP, AND RELIABILITY,

£7 17s. 6d.

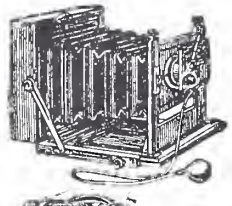
Fullest particulars in 24-page Pamphlet, Illustrated. Post free on application.

"Facile" Hand Camera at £3 13s. 6d. & £5 5s. Still "HOLDS THE FIELD" for VALUE & SIMPLICITY.

Ilford P. O. Paper in packets, 16 pieces, 6 x 4¼, 1s.; post free, 1s. 2d. Now Ready.

JONATHAN FALLOWFIELD,
CENTRAL PHOTOGRAPHIC STORES, 146, CHARING CROSS RD., LONDON.

JOHN PIGGOTT.





CAMERA CASES.

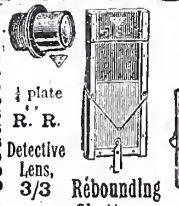
	¼-plate	½-plate	Whole plate
Solid Leather	11/6	12/6	19/9
Canvas Collapsing with sling	2/6	3/3	4/9
Postage	3d.	3d.	4½d.

"MY CAMERA."

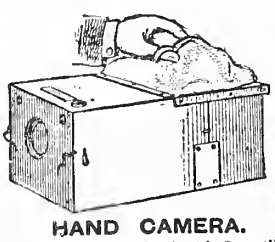
Size 4½ by 3½, including Rapid Rectilinear Lens, folding Tripod Stand, and fitted with Pneumatic Shutter, and one Double Dark Slide.

	Price complete,	£2	15	0
Size 6½ by 4½, Do. do.	" "	4	10	0
" 8½ " 6½, Do. do.	" "	6	15	0
Double Dark Slides, extra, 4½ by 3½		0	7	6
" " " 6½ " 4½		0	11	6
" " " 8½ " 6½		0	17	6
Camera and one Double Back only, 4½ by 3½	...	1	12	0
" " " 6½ " 4½	...	2	12	0
" " " 8½ " 6½	...	3	15	0

Postage, 3d



¼ plate R. R. Detective Lens, 3/3 Rebounding Shutters, ¼ pl. 1/-, ½ 2/- Postage 3d.



HAND CAMERA.

For 12 ¼-plates, fitted with Samuel's Changing Bag, 21/



MAHOGANY DROP SHUTTERS

For Lenses up to 1½ in. diameter, with Pneumatic attachment, 3/-





THE WAISTCOAT-POCKET OPERA.

Height 2½ in., weight 5 oz.

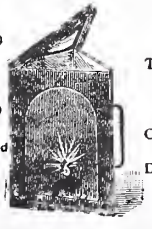
This is a powerful Opera and Marine Glass, with a long range and good definition, and is fitted with a compass at one end, diameter of object lens 1 in., price 15/6.

Steel Frame Spectacles—	per pair.
Convex only	7d.
Better Quality (concave or convex)	1/-
Light Frames	1/10
Pebbles	2/6 and 4/3
Best Finished Frame and Best Pebbles	6/6
Nickelled Curl Side, invisible frames	3/-
Cup or Deyes, any tint	3/10
Tinted, smoke or blue (flat glasses)	2/3

3d. extra for box and postage must be remitted with all orders for Spectacles and Folders.

GOLD FRAME SPECTACLES.

10 carat, glazed with best glasses, per pair 15/6



THE FOLDING TRAVELLER'S LAMP

The most portable Lamp ever made Price 3/- each.

Extra Lights for ditto, 2d. each. Postage 4½d.

Cheap Cardboard Lamps—(Folding) 6d. each, Postage 3d.

Do. with tin top and bottom—1/6 each, postage 4½d.



Please send for "My Camera, and How to use it," by JOHN PIGGOTT, List of Photographic Accessories, FREE.

117, CHEAPSIDE & MILK STREET, LONDON

IN LARGE OCTAVO, HANDSOME CLOTH, 18s.

PHOTOGRAPHY:

Its History, Processes, Apparatus, and Materials: comprising Working Details of all the more important Methods.

By A. BROTHERS, F.R.A.S.

GENERAL CONTENTS:—Part I. Historical Sketch; Chemistry of Photography; Optics of Photography; Light in Photography.—Part II. Processes.—Part III. Apparatus.—Part IV. Materials used in Photography.—Part V. Applications of Photography; Practical Hints.

*** **The Volume is fully Illustrated with Twenty-four Full-page Plates by the different processes described, and contains many Tables and Woodcuts in the Text.**

"A most comprehensive volume. . . . The PRACTICAL HINTS are of GREAT VALUE."—*British Journal of Photography.*

"Certainly the FINEST ILLUSTRATED HANDBOOK to photography ever published. . . . SHOULD BE ON THE REFERENCE SHELVES OF EVERY PHOTO SOCIETY."—*Amateur Photographer.*

A FULL PROSPECTUS ON APPLICATION.

London: CHARLES GRIFFIN & CO., Ltd., Exeter Street, Strand.

How to Make a Set of Photographic Apparatus.

By H. J.

Chapter I.

A SINGLE EXTENSION CAMERA.

In these papers I shall endeavour, as far as possible, to give plain and simple instructions so as to enable any and every one who can handle tools (and there are very few who cannot do so, more or less), to make a good, strong, and serviceable set of apparatus; and while a certain amount of brass work is absolutely necessary, I shall recommend it as little as I can, for two reasons; one is, brass work is very expensive, and the other, it requires skill to fix it properly, and also adds weight to the camera; and though some may think that a camera looks best when covered with brass, I do not think so myself, and therefore I say, do without it as far as you can.

A few hints as to the manner of preparing the wood will not be out of place here, and these will apply to the whole series of papers. Where practicable, the wood should be prepared in a long length—as, for instance, for the camera body, for dark slides, &c.—and cut off in lengths afterwards. When the wood is first obtained it will most likely be in the rough; now choose the best side and plane it smooth, straight, and out of twist; then mark this side and square

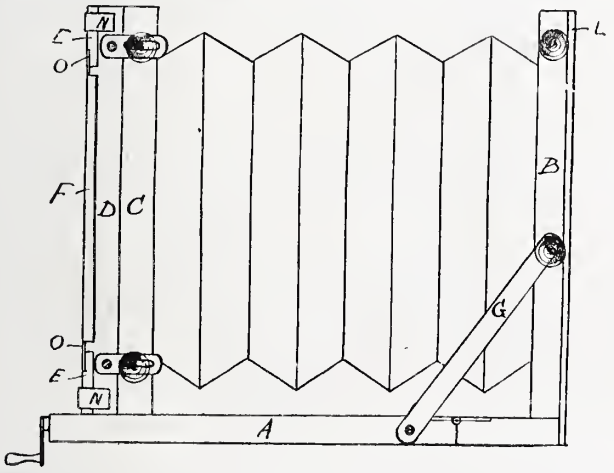


Fig. 1.

one edge from it, making it also quite straight and true. Now it is from this side and edge that all marking and squaring must be done, and the other side and edge must be also marked with a gauge from these two, and when planed to the marks the piece will be found absolutely true in every way. Strict attention to these particulars will cause better work to be done than would be possible otherwise; indeed, it is inattention to these small details which is the principal cause of the difference in amateur and professional work.

Having said so much by way of general introduction to the whole series of papers, I will now proceed with the one in hand. First as to the wood required; this should be well-seasoned mahogany, and if you can get a part of an old piano or bedstead or anything that has been made a few years, do so, as it will be better wood and also better seasoned than is possible to buy new; but if old cannot be obtained, then we must manage with new. It should be cut out to the various sizes required, and stood about in the sun a few days before working up, when it will be fit for use. All the sizes I am about to give are for a half-plate camera, which is the size I should advise you to make, as the fittings will cost but very little more than for quarter plate, and, if required, you can still use the smaller plates in the large camera. The brass fittings should be obtained before commencing to make the camera, as you can then fit them as you go on, and the bellows as well; these can be obtained from many makers, but some are much dearer than others. I therefore give a list of fittings below, with the prices they should be, and if anyone fails to obtain them at that price, I will do

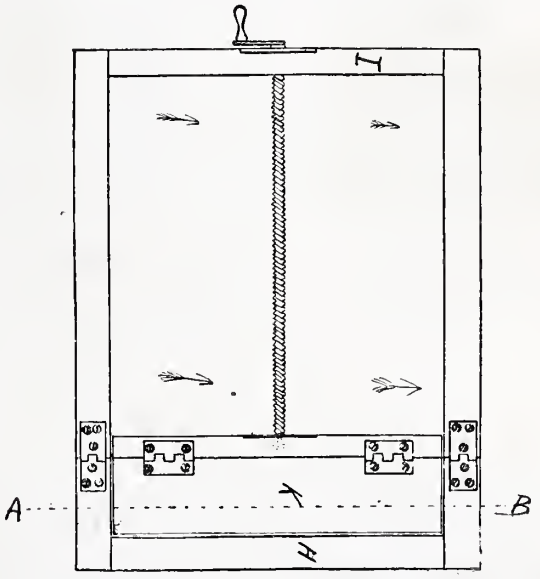


Fig. 2.

so for them if they will send remittance and postage. This I offer to do simply to oblige, as I would rather each one got them for himself.

	s.	d.
Focussing screw, complete	3	0
Hinges for baseboard, sliding piece in ditto, and focussing screen	1	6
Side stays and screws to front	2	0
Fittings for swing back complete	3	3
Brass strips to hold dark slide	1	3
Reversing back fittings, and stops for focussing screen	1	8
Plate and screw for rising front	0	9
Brass screws for the whole	0	7
	14	0

Leather bellows, 6s.; or cloth bellows, 4s.

The above fittings are finished and lacquered and the leather bellows varnished, which you should see is done with all fittings you buy.

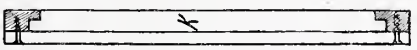


Fig. 3.

And now I will suppose that both wood and fittings are ready, therefore we can commence to make the camera. The baseboard will be the first to make; this is shown in plan in fig. 2, and a section of it, on line AB, is shown in fig. 3. The full size is $8\frac{1}{2}$ in. wide by $10\frac{3}{4}$ in. long; so first prepare a piece of board of that size and quarter inch thick, with the grain runing crosswise, that is in the direction of the arrow in fig. 2; now make a piece of the section shown by shaded portions in fig. 3, 22 in. long, and when made cut it in the middle (I should have given the size; it is $\frac{3}{4}$ in. $\times \frac{1}{2}$ in., the rabbet being $\frac{3}{16}$ in. each way),

and screw and glue one piece along each side of the above piece as shown in fig. 3, keeping the screws even distances apart and in a straight line, so as to give it a neat appearance; these two pieces are marked G on the plan, fig. 2. Now make the piece H, and fit in between the others; this will be the same size, but will require no rabbet, but must be fitted neatly in the rabbets of the side pieces and fixed with glue and screws in the same way; the piece I can also be fitted but not fixed yet. Now

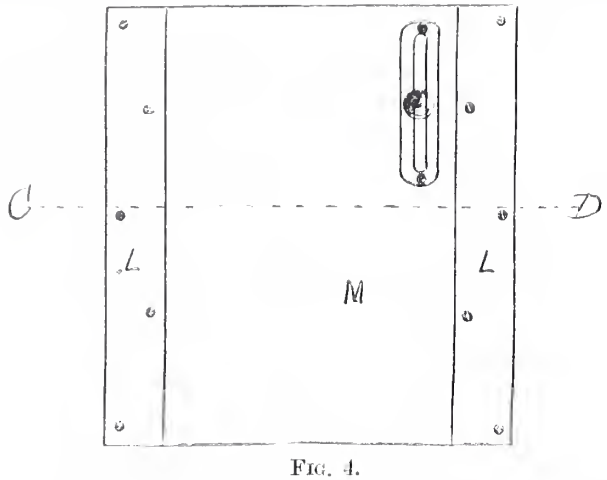


FIG. 4.

make the sliding piece K, figs. 2 and 3; this must be the same thickness as the side pieces, and 2 in. wide, and fitted so that it will slide easily in the rabbets of the side pieces, but must not be loose enough to move sideways. This piece can now be held close to the end of baseboard (H), and a mark made across the whole, $2\frac{1}{4}$ in. from the end; then let in the baseboard hinges and also the hinges of sliding piece as shown, keeping the round joint of hinge downwards and the centre of hinge just on the mark drawn across. The hinges having been fitted and screwed on, take them off again, and with a fine saw cut through the baseboard, and, taking off a shaving or two, to make the joint smooth, it will be ready for putting together again, but before doing this, let in the threaded plate of the focussing screw into the edge of the narrow part of sliding piece, and cut a slot for passage of screw through both parts of same piece from the bottom, that is the side away from the hinges. Now screw on both pairs of hinges again, and the baseboard can be laid on one side while the other parts are made.

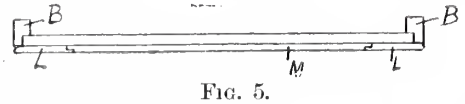


FIG. 5.

The camera body can now be made; this, as will be seen in fig. 1, is made up of three parts, marked B, C, and D, and are the front, back, and swing back respectively. As all three have to be alike, it is the best way to make them all in one, and cut them apart when made. We shall therefore want a piece of wood 3 ft. long, 2 in. wide, by $\frac{3}{8}$ in. thick. This is the size after it is planed up. A rabbet must be run along each edge, as shown in fig. 7 (which is a section of the finished wood), $\frac{1}{4}$ in. deep, and on half the thickness of the wood. This can now be cut into four pieces, and put together as shown in fig. 8, making it exactly $8\frac{1}{2}$ in. square outside. It would be a better plan to dovetail it together; but that requires some skill to do it properly, and I shall show how to do it in my paper on a long-extension camera, so that those who wish to dovetail it have only to wait a week or two and they will see the way to do it; in the meantime the method shown will answer the purpose very well, and is much easier for unskilled hands. Before putting the body together, set a gauge to $\frac{5}{8}$ in., and mark all the pieces from one edge, then alter the gauge to $\frac{1}{2}$ in., and gauge them from the other edge. These marks are shown in fig. 7, but of course they will be on the sides of each piece, and will be guides for the screws which fasten the body together; otherwise, if the marks were not made till it was finished, you might find that you had to cut through a screw or two. Do not omit to use glue, as well as screws, in putting the body together. After the glue has set, cut along each gauge-mark with a very fine saw, and just take a shaving off each part, so as to make it smooth, and, if you can manage it, run a small bead all round both edges of the middle piece C. This will give a finish to the camera when put together.

The front or widest outside piece can now be fixed to the front of the baseboard, keeping it just flush all across, the easiest way to fix it is by screwing from the inside of the front into the baseboard; two screws will hold it. You can now fix the bellows to this piece; that is done by glueing the front of bellows, and when placed in the frame B in their proper position, screw small strips of wood all round. This is better than trusting to glue only. Now draw out the sliding piece K, which can be done by first removing the end I, which I told you to leave unfixed, and fix the

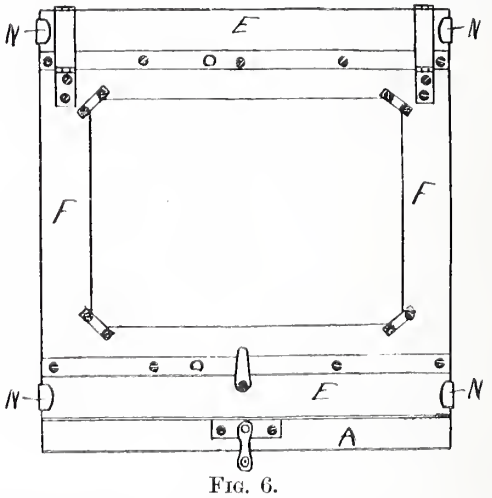


FIG. 6.

middle part of body to the wide part of the sliding piece, keeping it just level with the extreme edge, so that when the sliding piece is pushed as close as it can go to the end of baseboard the two parts of body will be together the same as they were before cutting apart. The fixed plate of focussing screw must now be fitted into the end piece I, and the screw itself cut to the proper length, which is so that it will just take hold in its nut, when the sliding piece is as far back as it will go. Now place the end I in its place, and turn the winch handle, when it will draw the piece C smoothly and easily up to the back end of baseboard, and if it works rightly the end of baseboard can be fixed in its place in the same way as the other end was, but *without* glue, as it might be wanted to take it out again at some time. The remaining part of the camera body can now be placed at the back of the others, and the other end of bellows fixed in it in the same way as the other was in the front, but whereas the other is hidden, this will be in sight when the reversing back is off, so care must be taken to put the strips of wood which hold the bellows in neatly. The front part of camera can now be finished. To do this first fit a piece of wood, deal will do, into the rabbet

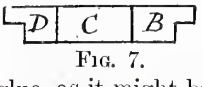


FIG. 7.

which is all round the front piece B; this can be fixed in with screws, and must have a hole about 4 in. high and 2 in. wide, in the centre. This, as will be seen, is for the lens, and the extra size in height is for the rise and fall of front. The thickness of this false front should be $\frac{1}{4}$ in., so that it just fills the rabbet, and this being fixed the real front can be made and put on. To make this, prepare a piece of $\frac{1}{4}$ in. mahogany, $9\frac{1}{2}$ in. long by $6\frac{1}{2}$ in. wide, gauge it up exactly parallel, and run a small rabbet down each edge *on the front*. Then prepare another piece $1\frac{1}{4}$ in. wide and double the length of the other, and run a similar rabbet down one edge, *on the back*. The other edge of this piece can be rounded, and then cut the piece in the middle, and screw one piece up each side of the front. The wider piece will then slide up and down in the grooves formed by the rabbets. The rounded edge of the narrow pieces will form beads, and will look better than though it was left square. The slotted plate can be let into the front, and a plug-nut inserted in the false front, so that a milled head screw will hold the front in any position. The front, complete, is shown in elevation at fig. 4, and in section at fig. 5.

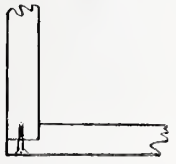


Fig. 8.

The hole for lens had better be left until you get your lens, and then cut it to fit.

The front stays can now be fixed. This requires no explanation, as they simply want screwing on, and the nuts inserted in their proper place, one to hold the camera open, as in fig. 1, and the other at the top when the camera is closed, the stay having a hook to engage with either one or the other as required.

We now come to the swing-back fittings, which are also easily understood without explanation, the plates being fixed to the swing back, and the nut of screw inserted in the other part; the back will then swing either way and will be fixed by a turn of the milled head.

The reversing back is the next part to proceed with. An upright section is shown in fig. 9. First prepare a piece of $\frac{1}{4}$ in. mahogany, and make it so that it will fit closely in the rabbets at back of camera, that is, in the swing back. Now cut out a piece $6\frac{1}{2}$ in. × $4\frac{3}{4}$ in. out of the centre, the $6\frac{1}{2}$ in. way being *across* the grain. Then prepare a piece 18 in. long, $1\frac{1}{4}$ in. × $\frac{1}{4}$ in., and rabbet it on $\frac{3}{8}$ in. and $\frac{1}{16}$ in. deep; it will then be of the same section as shaded portions in fig. 9. Now cut the piece in two, and screw one part of it on each edge of the other piece, overhanging nearly a quarter of an inch. These pieces must be fixed parallel with the long way of the hole cut out of first piece. Brass strips can now be screwed in each of the rabbets, as shown in section (fig. 9). These form the grooves for the dark slide to run in, and the brass could be dispensed with by forming the grooves in the wood, but I consider the brass is stronger, and the slides work better and with less friction, but you can use which you think best. The two clips can now be screwed on at one side and the two clip hinges at the other, fixing them so that they will hold the reversing back close in without being too tight so as to damage it, or so loose that it will drop off by itself.

The focussing frame will now finish the job. This is simply a frame fitting between the two brass strips, and finishing off level with sides of camera. It must be made with an opening of the same size as that in reversing back, and corresponding with it in every way, and a rabbet must be formed round the opening to hold the focussing glass, but this had better be left until the dark slides are made, as the surface of glass must be exactly in the same plane as the surface of sensitive plate in the dark slide; but as the focussing frame belongs to the camera I can give instructions for making and hanging it here, and it can be referred back to afterwards. The frame can be prepared in one length and mitred at the corners, the surplus wood on the long sides being taken off when it is finished. A small key can be put in to strengthen the mitres, but this I shall describe in the dark slide making, so it is no use doing so now. The focussing glass is held in frame with the four corner pieces, as shown in fig. 6, and is hung with double-jointed hinges and fastened with a turn-button at bottom, as shown in same figure.

A small hook and eye can be put on top of camera to hold it together when folded, and a handle for carrying, and the camera is done "except finishing," as they say. To finish it, take off all projecting brass work, and first give the inside woodwork a coat of dead black, which can be obtained for sixpence with the brass work, then rub over the outside of all woodwork with fine glass-paper, and rub in a little linseed oil. When this is well dried in, take a piece of wadding or cotton wool and roll it into a ball, cover it with a piece of old linen, and drop on it a few drops of French polish, and rub it all over the woodwork, using more polish as the rubber gets dry. When you have got a fair polish on it, stand it on one side for a day, and then go over it again, and finish off finally with a little methylated spirits instead of polish on the rubber, but be careful and do not let the rubber rest on the polished surface, always keep it moving.



Fig. 9.

The brass work can now be replaced and the camera is finished, and for use and looks will bear favourable comparison with any in the market at three times the amount it has cost to make it, reckoning nothing for the time of making, of course.

I shall in my next paper give instructions for making a double extension camera.

If there should be any detail which I have not explained sufficiently, or which seems difficult to understand, I will do do my best to make it clear, on your wishes being made known either through the columns of the Amateur Photographer, or by letter through the Editor.

EXPLANATION OF DRAWINGS.

Fig. 1. Side elevation of camera.
" 2. Plan of baseboard.
" 3. Section of baseboard on line A B.
" 4. Front elevation of camera.
" 5. Section of elevation on line C D.
" 6. Back elevation of camera.
" 7. Section of camera body before cutting.
" 8. Method of joining body at corners.
" 9. Section of reversing back.

REFERENCE TO LETTERS.

A. Baseboard.
B. Front part of camera body.
C. Back or middle part of body.
D. Fixing back.
E. Guide strips for dark slide.
F. Focussing frame.
G. Side stays.
H. Front end of baseboard
I. Back end of baseboard.
K. Sliding or focussing piece.
L. Side strips to front.
M. Rising front.
N. Clips and clip hinges to hold reversing back.
O. Brass strips to form grooves for dark slide.

The same letters refer to the same parts in all the drawings.

(To be continued)

Photography by Rule.*

A Retrospect.

Ten or twelve years ago, when the gelatine dry plate had finally conquered the prejudices of professional photographers, and the ranks of amateurs were being swollen by the accession of many to whom wet-plate photography was unknown except by name, it was often charged against photographers of both classes that their work was largely governed by "rule of thumb"—in other words, that in exposure and development, probably the two most important divisions of photography, success was allowed to depend very much upon pure guesswork, in contradistinction to system and calculation. Those were the days when the rapidity of the plate was generally under-estimated; when a frequent if not common method of compounding the developing solution was by shaking an unknown number of grains of dry pyrogallic into an unmeasured quantity of water, and, after soaking the plate in it, adding thereto an undetermined number of drops of ammonia. For rapid exposures, a simple drop shutter, whose rapidity of action could easily be accelerated, but was rarely if ever reduced to arithmetical expression, was mostly used; and albumen paper held practically undisputed sway for contact printing. These broad outlines of early gelatine dry-plate photography may, perhaps, serve to convey some idea of the chief conditions of working which obtained at that period—conditions under which, be it remembered, amateurs as well as professionals pursued photography.

It is, I am sure, needless for me to indicate precisely to what extent those conditions have been changed or modified, for you are all aware that development has been lifted from the low ground of a "rule of thumb" operation to the level of a scientific study; the comparative and particular speeds of sensitive preparations have been made the objects of close investigation and valuable experiments, and mechanical aids to exposure have called an apparently inexhaustible supply of inventive ingenuity into existence—the main and indeed the sole object underlying all those efforts being not merely the simplification of exposure and development, but their reference to pure rule and system. I propose briefly on the present occasion to consider some of the tendencies of modern photography—chiefly amateur photography—for which the application of this scientific method to several of its branches is responsible, and to submit a few reflections of a deductive character thereon.

Rule of Thumb.

Before dealing with that part of my subject, however, I wish to submit that the bad old "rule-of-thumb" days of gelatine dry-plate photography do not expose a very broad target for the arrows of our reproaches. Point to point, and excluding from consideration the well-directed but unconvincing productions of the new diffusion-of-focus school, a comparison of amateur and professional photographic work of twelve years ago with that of to-day reveals little, if anything, in favour of the latter. The portraiture of professional photographers is possibly, on the whole, more instinct than formerly with artistic feeling and treatment; but that is not a matter upon which I wish now to descant. It is from a technical standpoint alone that I desire to make the comparison. My own observations lead me to think that, technically speaking, in qualities of negatives and prints, the professional work of to-day is practically what it was a dozen years ago, taking it at both its best and at its worst. The negatives of the former period were, perhaps, not so pretty and clean to look at as those produced nowadays; but will anybody undertake to say that the resulting prints exhibit any traces of inferiority to those at the present time—that the negatives were not so well exposed, or that the prints were inferior in point of careful printing, uniformity, and depth of tone? The same question stands for all other kinds of professional work—always remembering that I wish it to have a technical bearing and no other. It is, of course, not so easy to make a comparison of amateur work, because in the times I am referring to, exhibitions were few and far between; but recalling the pictures shown at Pall Mall and elsewhere at that period, and contrasting them with those of to-day—a mental process in which, no doubt, most of you can accompany me—I fail to perceive that any distinction is to be made. Technically speaking, the work shown then was quite the equal of that shown now, and probably the average of quality was higher.

*Read before the North Middlesex Phot. Soc. by T. Bedding.

I have roughly traced the conditions under which photographers—amateur and professional, new and old—formerly had to work. Recollect also that failures were more frequent then than now. Dry-plate making was in its tentative stage, and, consequently, to the difficulties of exposure and development a large number of troubles incidental to the preparation of the film—such as are not often experienced nowadays—had to be habitually encountered. Those were the times of constant frilling, of red and green fog, and of numerous mechanical imperfections in the films; and the percentage of failures was, consequently, high. Yet, notwithstanding these obstacles and drawbacks; notwithstanding unscientific rule-of-thumb methods of exposure and development; notwithstanding a condition of knowledge of applied photography such as many to-day might be inclined, with their superior advantages, to stigmatise as ignorance, we have not, I submit, made any technical advances on the productions of that time. Tastes and fashions have changed in respect of new developers, printing surfaces, and so forth; but a change does not necessarily lead to an improvement in intrinsic quality.

A Plea for Technical Excellence.

Do not, however, suppose that I am not alive to the economical advantages of the improved developers with which we are working; of film photography, of the value of orthochromatic plates for certain classes of work, and of the remarkable cleverness displayed in countless shutters, hand-cameras, and so forth. Each of these has its uses according to individual idosyncrasies, but, if I am correct in my suggestion that in technique photography stands to-day where it stood at the commencement of the last decade, their introduction was not called for by necessity, and their existence is not essential, and has hardly been justified by results. I am unable to understand that they have improved the technique of photography. Technically good photographs, I venture to think, are not so prevalent that we can afford to regard them with the contempt bred by familiarity. At a moment when the art aspects and attributes of photography occupy so much attention, perhaps a plea for technical excellence may not be misplaced. While I have, I hope, as keen an appreciation as any one not an artist of what is artistic in photography, I am equally ready, and I trust capable, of appreciating what is technically good in any photograph, whether it makes pretension to being a work of art or not. Definition, however finely rendered, appeals to my sense of the fitness of things in the contemplation of photographs of architectural subjects, and I am unregenerate enough to prefer it to fuzziness in landscape work, with or without figures. Definition, or sharpness to a refined degree, is in practice not so easily or invariably obtained; a photograph is not so frequently taken from the correct or the most favourable point of view; distortion and other optical imperfections are not so often absent as the critical might desire; the negative is not always so carefully exposed and developed as to secure all the detail and the gradations of the subject; the printing process chosen does not so often do credit to the discrimination or the selective faculties of the photographer; and the resulting print does not so often embody the essentials of what a good print should be, that we can afford to treat excellence of technique with indifference when we meet with it. A perfect photograph of even the most commonplace object is, I consider, a tribute to the skill of the photographer, and from a technical point of view is just as calculated to evoke the admiration and the approval of photo-technologists as an art-photograph is that of an art-photographer. A line drawing to scale of a great public building by an architectural draughtsman has certain elements and qualities in it which appeal to the cultivated perceptions of an architect. Your artist may sneer at its "mappiness," but he dare not and cannot impugn its proportional accuracy and its fidelity. On the other hand, when the artist idealises the same building in his painting, how easy it is for the architect to discover faults of perspective, proportion, and drawing! At the Royal Academy there is (or was) a room devoted to architectural drawings, and, I believe, it is on record that some years ago some such disparity as that which I am now hinting at was pointed out and commented upon.

The Focussing Screen the best Actinograph.

Heretical though it may sound, I do not think that the cause of photographic technique is in the least likely to be advanced by the present disposition, especially among amateur photographers, to base the making of the photograph as much as possible upon

AN UNSOLICITED TESTIMONIAL FROM AN **AMATEUR** OF

22 YEARS' EXPERIENCE.

To Messrs. ELLIOTT & SON,

BARNET, HERTS.

"Dundrennan, Kirkcudbright, N.B.,
23rd April, 1892.

"DEAR SIR,

I yesterday effectually tested a packet of your **Ordinary Barnet Plates** upon Landscape subjects. I used Drop Shutter on every plate, single Landscape Lens, Stop *f*/16 light good, and

DID NOT MISS A PLATE, ALL GOOD,

and without doubt after the full **experience of 22 years** I have no hesitation in placing the **BARNET PLATE** in the very front rank, as a **quick, clean,** and **easily developed plate of the HIGHEST ORDER.**

"Yours faithfully,

"J. COPLAND."

May be obtained of all leading Dealers, or direct from the Works,

ELLIOTT & SON, BARNET, HERTS.

Wratten & Wainwright's
CELEBRATED
"LONDON" PLATES,

"ORDINARY" (15°). For Landscapes, Copying, and Transparencies.
"INSTANTANEOUS" (19°). For Studio and General Work.
"DROP-SHUTTER SPECIAL (24°). For Dull Weather and Hand Cameras. The most rapid Plate made.

Have been manufactured continuously for fifteen years, and have never yet been approached in quality. They are recognised by the most competent authorities as the standard by which all other Plates are judged. These Plates are indispensable for the production of Exhibition Pictures. More High Class Medals have been secured by results on the "London" Plates than all others combined.

Wratten & Wainwright's
SENSITIZED PAPER

HAS THE LARGEST SALE AND HIGHEST REPUTATION, KEEPS WELL, TONES EASILY, AND **DOES NOT BLISTER.**

Post Free—per Quire, 13/6; Half-quire, 7/-; Quarter-quire, 4/-; 3 Sheets, 2/3; Sample Sheet 10d.
Cut Sizes, 1/- per Quire extra.

APPARATUS, CHEMICALS, ETC., OF THE BEST QUALITY ONLY, AT LOWEST MARKET PRICES.
Catalogues and Estimates Free.

WRATTEN & WAINWRIGHT, 38, Great Queen Street, Long Acre, London, W.C.

TELEPHONE No. 2776. TELEGRAPHIC ADDRESS: "WRATTEN, LONDON."

HURTER & DRIFFIELD'S
ACTINOGRAPH.

NOW READY FOR THE FOLLOWING LATITUDES:

20° 0′	North.	Sandwich Islands, Mexico, West Indies, Cuba, Nubia, India, Burmah, China.
47° 30′	,,	Canada, Newfoundland, France, Switzerland, South Germany, Austria, South Russia.
52° 30′	,,	Canada, Great Britain, Holland, North Germany, Northern Russia.
57° 30′	,,	North Canada, Scotland, Sweden, St. Petersburg, North Russia.
30° 0′	South.	Buenos Ayres, Monte Video, Chili, Cape Colony, Western and Southern Australia, New South Wales, Victoria.

The following are in preparation, and will shortly be ready:—

0° 0′	Equator.	40° 0′	North.	20° 0′	South.
10° 0′	North.	62° 30′	,,	40° 0′	,,
30° 0′	,,	10° 0′	South.	47° 30′	,,

Read the following

UNSOLICITED TESTIMONIAL.

2, ST. MARY'S ROAD, CANONBURY, N.,
July 14*th*, 1892.

Messrs. MARION & Co.—Gentlemen,

I have been trying your three qualities of Plates—Ordinary, Rapid, and Instantaneous—on a variety of out-door subjects, in bright and dull weather, being guided as to exposure by the new Actinograph (Hurter & Driffield's Patent), and "speed" marked upon the packages. As the result I find the system uniformly successful, for I have not lost a single plate.

Yours very truly,

JOHN SPILLER, F.C.S, F.I.C.

MARION & CO., 22 & 23, Soho Square, London, W.

rule and system. The rule of thumb and pinch of pyro days of photography are, perhaps, over—thanks, not I believe, to formulæ-mongers and mechanico-arithmeticians, but to the fruits of experience and experiment. I consider it an unfortunate thing in several respects that there are so many inducements to modern amateur photographers to attempt the acquirement of a sound photographic judgment by other methods than that of simple experience. Let me cite, in point, those so called aids to exposure, actinographs, actinometers, and exposure-meters, as calculated rather to prevent the cultivation of individual judgment than to foster it. You must remember that professional portraitists and landscape-workers, and the old-style amateurs, of whom I have already spoken, relied upon experience alone to guide them in their exposures. My own belief is that a man who takes up photography will surmount the difficulties of exposure by the aid of his own brains, or not at all. If he has not brains enough for that, then he is equally incapacitated for mastering the philosophy of exposure calculators. I am about to examine some of the principles upon which actinometrical or actinographical systems are based, and possibly to draw some conclusions not entirely favourable to them; but, before doing so, there is one exposure-meter which I must exempt from objection. Indeed, I recommend it to each and every one of you. It is, I think, the cheapest and most efficient on the market, does not get out of order, if destroyed may be easily replaced, requires no arithmeticial calculations to use, and may be had of all dealers. It has been testimonialised by the most successful photographers throughout the world, and, when once its application is mastered, it seldom leads you astray. With it all the best photographs have been taken, and thus, in regard to medals, it, as our friends at Ilford would say, has secured more than all the rest. It is an exposure-meter which enables the photographer with brains enough to use it to get twelve good negatives from a dozen plates. No photographer should be without it, and no photographer is. Need I say, gentlemen, that I allude to the focussing screen of the camera? It is by the study of the image on the screen, it is by comparing the depth of the shadows, the strength of the half-tones, the brilliancy of the high lights, with those of other pictures taken under similar circumstances; it is by studying the visible influence of the lens diaphragms on the brightness of the image; in short, by comparing the exposure about to be given with that previously given under similar or different conditions, as the case may be, that experience was gained in former times. It is theoretically a very unscientific method, of course, but you all know how well it has answered practically. Occasionally it fails; but can you conceive of an infallible actinograph? Besides, it is good that it should fail at times for what an education in development under and over exposure provides for the painstaking photographer, who is willing, as he should be, to learn from his failures! You may say to me that these last advantages also accrue to the employment of an exposure-meter or an actinograph? Granted; but in that case why use an exposure meter or an actinograph? An instrument or system of this nature, plus an unerring judgment of those factors in exposure compulsorily left to the estimation of the individual, and which is fallible, seems to me not to possess any point of superiority to the unaided fallible judgment alone. I shall endeavour to show that the probabilities of any instrument or system for indicating correct exposure can scarcely be other than incorrect, to the contrary of which there are practical objections which science is, I believe, powerless to overcome.

No Exposure Factors "Constant."

Mr. Howard Farmer recently pointed out that several important factors are not taken account of in certain systems of calculating exposures; but, even if the omitted factors—such, for example, as colour and distance of object—were included, I will submit that theoretical or practical accuracy could not possibly be assured. To the inexperienced or the beginner in photography, for whom, bear in mind, all these aids or guides to exposure are intended, the difficulty of estimating, or, rather, of judging the actinic value of the light on any day or at any hour is no considerable one, especially if you reflect that even a photographer of ripe and lengthy experience is occasionally mistaken in his judgment. I have seen it stated that of the three principal factors involved, viz., the light, the speed of the plate, and the aperture of the lens, the two latter are constant. But the ascertained comparative or particular speed of a plate so soon as it leaves the manufacturer's drying-room does not appear to be above suspicion of change. Quite recently, Dr. Vogel, of Berlin, gave instances where commercial plates materially increased in sensitiveness after a month or two's keeping, and the same phenomenon has been claimed to have been observed by several other workers during the last few years. On the other hand, some photographers have concluded from the results of experience that sensitiveness diminishes by keeping. If either of these two theories is correct, the speed of a plate, no matter how it is ascertained, cannot be reasonably accepted as a constant factor in exposure calculations. Again, the argument, in reference to the aperture of the lens, that all lenses are of equal rapidity with a given stop, assumes two conditions which are far from being always realised, namely, that the diameters of the stop openings are accurately expressed in relation to focus, and that all lenses are on an equality as to the amount of light they pass. Optical glass, however, is, I believe, of somewhat varying quality as regards colouration, experiment having proved that even in modern lenses as much as twenty-five per cent. of the light is occasionally obstructed by the colouration of the glass as compared with the glass employed in other objectives. One can easily understand that time superinduces changes in the glass of lenses as well as in the material with which they are cemented so as materially to slow them. Can it, then, be fairly claimed that all or either of the three factors I have referred to are to be accepted as constants in basing calculations upon them? If so, in what manner will you dispense with individual judgment if you admit, as you must, the no less important factors of colour and distance of objects to your calculations? I put it, that constancy of any of the factors in exposure calculations is far from being the certainty we are asked to believe.

"Formulæ."

That exposures calculated according to the systems we are now discussing are sometimes correct, I do not deny; it would be strange were it not so. But an exception does not negative a principle, and it is a principle I am urging, namely, that of buying photographic wisdom by photographic experience. The world's photography has so far been accomplished by the aid of the actinometrical readings of the focussing screen; why, then, should the beginner or student expect to extract from mere empiricism the knowledge which has been shown to resul from the reliable, although unscientific, method of trial and error? The plethora of new developers, the legion of hand-cameras and rapid shutters, the numerous exposure systems, seem to me to be the articulate expression of a wish to compress photography, taking into a rule-of-three sum, and so to enable one to run without the necessity of having to learn to walk. Do not understand me as advocating rule of thumb; I am merely advocating the exercise of the individual intelligence as opposed to falsely inspired formulæ. The word formulæ here induces me to recommend to you a source of instruction as to the wide range in difference of opinion which prevail among dry-plate makers and dry-plate users in respect of the proportional constitution of developing formulæ. Make a collection of such formulæ from representative sources, and convert them either into parts per thousand or grains and minims per ounce, and you will assuredly have a most bewildering statement of proportions of accelerator to reducer, and of restrainer to both, together with a lengthy list of ingredients which appear in some formulæ and not in others, and the exact functions of which many people would find it difficult to define. In the normal developer for A's plates, for example, you may see one and a half grains of pyro, eight of sulphite, and ten of sodium carbonate to the ounce; in B's developer the quantities doubled; in C's one constituent quadrupled and another halved, while in D's the inter-proportions suggest nothing so much as the constituents having been selected purely by haphazard. The curious part of the matter is, that in all probability A's developer will develop C's plate perfectly, and D's B's, and so on; in short, each or any one of the many developers you analyse, although specifically recommended for one brand of plates, will develop any other brand equally well. So much the better for the users of gelatine plates, you will say, and I endorse the sentiment, but do not overlook the obvious point, and that is that after all the years during which "scientific development" has been preached, practically the old rule of thumb still survives, and that, on the whole, photography is little the worse for it.

"Photography Made Easy."

The commercially created and fostered tendency among amateur workers to substitute for the mellow judgment of experience and unwearying practice the ephemeral wisdom of the many aids to

easy photography which shrewd men of business are always anxious to supply on demand, tends, in my humble opinion, to undermine those valuable characteristics of practice, patience, application, self-reliance, and perseverance which have hitherto been recognised as essential to the making of the successful photographer, amateur or professional. Frankly speaking, I look upon it as one of the causes to which we may refer the admittedly low average of quality of modern amateur work. The best amateur work of to-day is undoubtedly as good as, and possibly better than the work of ten or twelve years ago; but the average strikes me as lower, an opinion which I base on a comparison of the work shown on the walls of exhibitions during that time. Probably the seductive simplicity of the hand-camera and the fascinating facility of shutter work have also operated in the same direction.

In conclusion, I renew the plea I have already entered for technical excellence of photographic work, for technical skill in producing it, for technical instinct in appraising it. But the excellence, the skill, and the instinct can only be reached by assiduous cultivation. Believe me, while there are many persons to whom a photograph is only admissible when it appeals to their æsthetic emotions, there are probably a far larger number who, while ready to welcome the artistic effects produced by "diffusion of focus" and low-keyed tones on rough surfaces, have a far higher appreciation of the technical qualities previously referred to. Whether or not the cause of technical photographic excellence and progress is likely to be promoted by the attempts now being made to convert photography into an involved arithmetical exercise, and, in fine, what the tendencies of that movement are, is a point for discussion that I have endeavoured to lay bare to you in the course of a series of intangible generalisations and impressionistic reflections which, I hope, while blunting the edges of your critical dissecting knives, have not wholly undeserved the attention you have been so good as to bestow upon them.

The Theory of Development.

NOTES ON PROF. H. E. ARMSTRONG'S PAPER,

By H. M. ELDER, M.A.

The paper read by Prof. Armstrong at the last Camera Club Conference, with the exception of a paper read by Mr. Bothamley at the Conference three years ago, is the first attempt that I have seen in print to apply some of the modern views of chemical action to questions of photographic chemistry. According to these views, chemical change is looked upon as conditioned by the energy relations of the substances undergoing change. This being so, I hope I shall be excused if I say a few words about the objects aimed at and the results obtained by this method of looking upon chemical change.

It was in 1867 that the Swedish chemists Guldberg and Waage published their great paper entitled, "Etudes sur les Affinités Chimiques." In this paper they considered the effects on the course of a chemical reaction of variations in the quantities of the re-acting substances in any given volume, that is, of the concentrations of the substances. They enunciated the law that the speed of chemical change, or the number of equivalents undergoing change per unit time, is, other things being equal, proportional to the concentration, or, as they call it, the active mass of each of the substances taking part in the change. They devised experiments to verify this principle on two lines. In the first place they considered a reversible reaction, such as has been well described by Prof. Armstrong, in which a state of equilibrium had been attained, and no further change was proceeding. They pointed out that such equilibrium must be looked upon as due to the simultaneous occurrence of equal and opposite changes, or of changes the speeds of which were equal. By the application to such a system of the law mentioned above they were enabled to find numerical relations between the concentrations and the tendencies to change of the bodies concerned. In the second place, they considered the speed of a reaction in course of progress, and were thus enabled to find relations between the tendencies to change or co-efficients of affinity of various bodies. In 1865 and 1866 a somewhat similar view was put forward in two papers printed in the Philosophical Transactions of the Royal Society, by Messrs. Harcourt and Esson. These papers contain a very complete discussion of two cases of chemical change considered from the second point of view, and an enunciation of practically the same law. Since this time Ostwald, Potilitzin, and others on the Continent have done much valuable work in this direction by various methods.

The result of all their researches is to confirm the laws enunciated by Guldberg and Waage, which may shortly be stated as follows:—The speed of a chemical action is, other things being equal, proportional to the active masses of the bodies taking part in the reaction. It also depends on the presence of other bodies, each of which exerts its specific influence in proportion to the quantity present, and on any subsidiary or secondary reactions that may occur. The active mass of a reacting body is in general proportional to its concentration, but if any of the substances taking part in the change are immiscible with the rest, the active masses of such substances may usually be taken, at least approximately, as constant.

To take Prof. Armstrong's paper in detail would involve a very lengthy discussion, as there are so many points of great interest referred to, on each of which there is a great deal to be said. I will, therefore, only consider a few of the questions raised.

In the prologue of his paper, to use Prof. Armstrong's own word, he advocates the consideration of the changes that take place in development from an electrical point of view, and from a paragraph later in the paper I gather that he would look, as it were, through electrical spectacles on the changes produced by the action of light. Now, with all deference, I would submit that not much, if anything, is to be gained by taking this point of view. In fact, I think that it distinctly increases the already great difficulties that meet us. It is, of course, a truism to say that electrical action always occurs with chemical change, and that there is an electric current set up in some circuit, molar or molecular; and in the case of measureable circuits, such as are considered in discussions on electrolysis, much is to be gained by this method. But when we have to think of molecular circuits, which by no possibility can be handled or measured, the application of Ohm's law would seem to be merely the explanation of *ignotum per ignotos*; and our knowledge is not advanced by such a discussion! All chemical action, whether we consider it from an electrical point of view or not, must ultimately be explained, so far as it is capable of explanation, by dynamical considerations, and in our present state of knowledge it is far simpler to apply these considerations in a manner that is independent of the mechanisms by which the actions are brought about than to complicate matters by considering this at least partially unknowable mechanism.

There are three laws of physics that may be applied to any physical or chemical system without a knowledge of the structure or mechanism of the system. These are—(1) The law of the conservation of energy, known as the first law of thermodynamics; (2) the second law of thermodynamics; and (3) the principle of least action.

Of these the first and third are axiomatic and are universally true, while the second is a deduction from observation, and is perhaps included in the third. These three laws are purely dynamical principles, and, in my opinion, the application of them is more likely to yield good fruit in the present state of our knowledge than considerations involving an assumed knowledge of the mechanism of chemical change.

Prof. Armstrong, in the prologue to his paper, is really making use of the first of these laws combined with the second used qualitatively. But, as I have already said, it seems to me to be introducing a somewhat needless complication when he translates the straightforward expression of the tendency of available energy to fritter itself away into heat at a low temperature into electrical language, and expresses it in terms of a circuit, the electrical constants of which are necessarily unknown.

Passing on the next portion of the paper, development is considered as a reversible action, which is subject to the Guldberg and Waage laws. This may be looked upon as the application of the third fundamental principle that I have mentioned, since Prof. J. J. Thomson has been able by a course of mathematical reasoning to deduce the Guldberg and Waage laws from the principle of least action (*see* "The Application of Dynamics to Physics and Chemistry," by J. J. Thomson, chap. xiv.). It is most welcome to see an attempt to consider the chemical actions that are utilised in photography from this point of view, though we are still too ignorant of their nature to give a complete account of them. In putting forward their theory, both Harcourt and Esson, and Guldberg and Waage, were careful to

choose tho simplest reactions they could find, and naturally so, as their object was to illustrate and confirm their theory. But now that the broad principles are beyond doubt, we may struggle to apply them to more complicated systems.

Before, however, considering this further, I wish to somewhat demur to an assumption which is, I think, generally made, and which Prof. Armstrong makes explicitly in his paper, viz., that the action of ammonia in the developer differs in nature from that of the fixed alkalis, because the silver haloids are soluble in ammonia. Now this is, I think, a pure assumption, and we have no proof that it is the case. The difference in result is, I think fully accounted for by the undoubted pigmentation of a pyro-ammonia developer image; and, in fact, from Mr. Bothamley's experiments described at the Conference, it seems that the silver haloids in a gelatine plate are not dissolved in ammonia of such strength as is used in developers. It is proverbially hard to prove a negative, and perhaps Mr. Bothamley's experiments are not absolutely conclusive; but, so far as they go, they show that up to the present we have no right to assume that the action of ammonia depends on its solvent powers.

[It is but right, however, to add that since writing these lines I have received strong evidence on the other side. Prof. Meldola tells me that some years ago he examined a quantity of pyro-ammonia developing solution that had been repeatedly used, and was able to find a quite appreciable quantity of silver in it.]

Let us now consider the nature of the system with which we have to deal. At any point of an exposed plate we have a certain quantity of reduction product produced by the action of light, together with unaltered silver salt and the vehicle. We may probably leave the vehicle out of consideration, as it will exert a constant influence during the progress of development. The case of a wet plate appears to be simpler than that of a dry plate. The active mass of the reduction product, which we may consider for the present purpose to be metallic silver, is probably here constant, and may therefore also be left out of consideration except as inducing chemical action. The reaction becomes simply the reduction of silver nitrate influenced by the presence of the acid restrainer, which acts in proportion to its concentration, and is what Guldberg and Waage call a "*corps etranger.*" Let A stand for the number of gramme molecules of silver nitrate present in unit volume at the beginning of the reaction, B the number of reducer, x the number of molecules reduced at any time t, then the velocity of the reaction will be given by

$$\frac{dx}{dt} = C_1 (A - x) (B - x)$$

when C is a constant quantity of magnitude depending on many circumstances, among others the quantity of acid restrainer present.

The velocity of the roverse reaction will be

$$\frac{dx'}{dt} = C_2 x'$$

when C_2 is another constant, and x' stands for the number of molecules of ferric salt formed in the case of ferrous sulphate development. No notice is taken here of reduced silver, since we assume its active mass to be constant, and this constant is included in C.

Development will then proceed until

$$C_1 (A - x) (B - x) = C_2 x$$

and the quantity of silver deposited and the rate of development is seen to depend on the concentrations of the free silver nitrate present and of the developer. It also depends on the magnitude of the constants C_1 and C_2, in which is involved the density of the reduction product and the quantity of restrainer. It is possible to develop these equations so as to show explicitly the effect of the restrainer, but perhaps it is hardly worth while to do so now.

The case of dry-plate development is more complicated, for in this case the reduced silver is drawn from the solid haloid in the film, and we are unable to assume that the active mass of this is constant. It is, in fact, my habit to think of an emulsion as something between a true solution and a solid suspended in a liquid, a somewhat loose mode of thought I fear, but convenient. I would then think of the silver haloid in a gelatine or collodion film as possibly partly subject to some of the laws of solutions. You will easily see how enormously this adds to the difficulty of the problem, so much so in fact that I do not intend to tackle it in the way I have indicated for a wet plate, but rather piecemeal.

The influence of the alkali in starting development is no doubt due to the positive heat of neutralisation that it possesses, but this notion fails to give any explanation of tho hastening caused by increasing its strength. This, I think, must be considered, together with the influence of bromide as a restrainer. They are certainly both of the nature of mass actions. If now we write A for the initial concentration of the alkali, and B for that of the bromide, we have an equation of the form

$$\frac{dx'}{dt} = C_1 f(x') (A - x')$$

for tho rate of reduction of silver haloid, or, what comes to the same thing, the rate of neutralization of the alkali.

Here x' stands for the number of molecules of alkali neutralised at the time t, and $f(x')$ is some unknown function of x' depending on the mass action of the emulsified silver haloid.

A similar equation holds for the reverse action—

$$\frac{dx''}{dt} = C_2 \phi (x'') (B + x'')$$

At any moment the rate at which dovelopment is proceeding is the difference of these, viz., if x be the number of the molecules reduced—

$$\frac{dx}{dt} = C_1 f(x) (A - x) - C_2 \phi (x) (B + x)$$

Now if we may treat $f(x)$ and $\phi(x)$ as constants, viz., if we may take the active masses of the silver haloid and reduced metal as constant, which we may probably do in the beginning of the reaction, this equation becomes

$$\frac{dx}{dt} = C_1 A - C_2 B - (C_1 + C_2) x$$

which can be integrated, and becomes

$$(C_1 + C_2) x = C_1 A - C_2 B + M e^{-(C_1 + C_2) t}$$

when M is an arbitrary constant.

This, to the best of my recollection, agrees with the results of a rough series of experiments of the slowing effect of bromide on development which I carried out about six years ago, of which I have unfortunately lost the notes.

Passing on to the next point about which I should like to say a great deal, but will spare you; Prof. Armstrong's statement as to the nature of the latent image, that he has reason to believe that there are two distinct images formed, which he calls provisionally the blue and yellow respectively, is new to me and very interesting; but one's interest would be very greatly increased if he would give the reasons for the faith that is in him. I am aware that Mr. Baker considers that he has evidence of the existence of two bodies produced by the action of light on silver chloride, and I hope that, as he is here to-night, he will tell us something about his work and the interesting results that he has obtained. But from what I have already heard from him, I do not think that his two bodies would at all answer to those that Prof. Armstrong suggests rather than deseribes. Perhaps, however, I am mistaken, and he will enlighten us. There is also in this part of the paper a paragraph that I hope Prof. Armstrong will explain, for I must say that I cannot in the least understand what he means by saying that the aetion of light is *electrolytic*, at least if the word is to be taken in its ordinary sense.

In noticing the suggestion put forward in terms of the double latent image to account for the behaviour of an over-exposed plate, I would simply remark that I did not understand from Mr. Baker that the oxy-haloid of silver was an unstable body, but, on the contrary, a most stable one. However, I hope he will enlighten us on that also.

In conclusion, I would like to make a few remarks on the phenomenon known as reversal or solarisation looked upon from a dynamical point of view. The facts as regards this phenomenon are fairly well known; our President and others after him have abundantly shown that reversal is due to a re-halogenisation or re-oxidation of the body produced in a sensitive film by the action of light, and, in his admirable "Chemistry of Photography," Prof. Meldola has attempted to work out some explanation of the reason that this takes place by the action of light alone. He concludes his speculations by the suggestion of a very beautiful analogy, in which he compares the action of light to that of a dynamo employed to charge a series of accumulators. In this

case the opposing electro-motive force of the cells may rise to such a point that it reverses the current through the dynamo, when the cells discharge only to be recharged in the opposite direction, and the same events again occur. Now the action of light seems to me to be a far moro complicated matter than this, and I do not think that the suggested explanation, ingenious and beautiful as it is, will quito meet the facts.

Let us consider a sensitive plate as a system in dynamical equilibrium. There is a tendency for the silver salt to be reduced at the expense of the organic sensitiser present, which is counterbalanced by the tendency for it to be re-halogenised by the halogen compound formed with the sensitiser. As soon as light begins to act upon the plate, the factors determining the values of these tendencies in terms of the equivalent active masses of the bodies present are so altered that the silver haloid is partly reduced, and we should expect this action to continue at a speed depending upon the intensity of the light acting until equilibrium was again reached, a certain quantity of reduction product being found, and an equivalent quantity of sensitiser halogenised.

Now if we for the moment leave out of consideration any physical effect due to the vehicle, in terms of Prof Meldola's explanation, as soon as the state of equilibrium is reached the action of the light becomes reversed, or possibly, if I may put it so crudely, the reducing action of the blue rays ceases to have any effect while the oxidising action of the red rays comes into play, the factors are again altered, and the reduced substance is again oxidised till we get a reversal, *i.e.*, a positive image instead of a negative, when a re-reversal takes place, and so on. In terms of the Guldberg and Waage notation, if A be the number of molecules of silver haloid originally present, and x the number reduced at any time, and consequently the number of halogenised sensitiser formed, when equilibrium is attained,

$$C_1(A-x)=C_2x.$$

Now, according to Prof. Moldola, this equilibrium is essentiall unstable, and when it is reached the action of the light becom es reversed just as the current in the dynamo of the analogy is, and the light proceeds to undo its former work, and to restore the original state of tho plate. It is probably duo to my ignorance, but I fail to see any reason for this instability and consequent reversal, and it appears to me more natural to suppose that the action would stop at this point. We know, however, that it does not, and so a further explanation must be sought. Also we know that to reach such a state of equilibrium as is here described would take an infinite time, and therefore could only be reached for any given intensity of light if the intensity varied slightly, as the current in a dynamo will do owing to unevenness in driving. If the suggestion of Prof. Armstrong, that there are two products of light action, be considered from this point of view, it will be seen that it merely amounts to a furthor specification of the mechanism by which a state of equilibrium is approached, and the same deadlock is reached.

The difficulty is only removed a step further by, according to a suggestion of Prof. Meldola, attributing the first reversal and re-reversal to the protective action of the gelatine hardened by liberated halogen and light on the silver salt. Besides, I have been told that M. Jansenn has observed recurrent reversals in collodion plates without an organic sonsitiser, though I have not been able to find the reference, and I gather from a note in one of Capt. Abney's papers in the *Philosophical Magazine* that such reversals do not occur. The protective action of the gelatine would account for a first neutral point, a reversal, a second neutral point and second nogative image, with possibly a third neutral point in a gelatine plate, but seems unable to account for more reversals than this.

I should liko to say much more on this subject, but I will only say further that destructive criticism is very easy, and though I fail to follow the explanations of reversal that have been referred to, I am totally unable to suggest anything better.

Finally, I would say, that Prof. Armstrong's paper seems to me to literally bristle with hints and suggestions, only a few of which I have referred to, and that I fear in a most incomplete manner, though I hope I have not laid myself open to the reproach that is often made against Shakespearian and other commentators, viz., that I have found a great deal in the paper that the author never intended to put into it. The fact is that these subjects are so interesting that one could run on for hours and not exhaust them.

Film Enlarging by Cresco-Fylma.

A DESCRIPTION of this process was given in our issue of December 25th last. We offer in this number a few hints that may prove acceptable to our readers.

The amount of extension can be controlled by alterations in our developer. Briefly stated, the stronger the accelerator and the quicker the development, the smaller the enlargement gained, until, when we come to a forced and yellow film, the amount of enlargement is considerably reduced, besides getting a curl in the film.

We will start by assuming that hydroquinone is used as developer, and hydrate of potash or soda is used as accelerator; possibly the enlargement is not so great as desired. The remedy is to reduce the amount of hydrate, substituting some weaker alkali such as carbonate of potash, and developing more slowly. On the other hand, if the films enlarge too readily, replace the carbonates by the hydrates of potash or soda.

The effect of the temperature should always too be taken into account. In the height of summer the solution will work well if diluted with as much as three parts of water for lantern plates, and two parts for negative films. We find it best in practice to use with a weak solution, and should the film not enlarge to its full extent, cautiously add a little warm water.

Another point to be considered is the slight loss of density; this is immaterial in the case of lantern plates, as the development can always be carried a little further than usual, but should a negative be below printing density to start with, intensify with bichloride of mercury, and blacken with sulphite of soda *before* enlarging, not ammonia. Ammonia should be scrupulously avoided in hydroquinone development, and all dishes should be cleaned with methylated spirit, to quite free them from every trace of hypo, etc., or a curl in the film will ensue.

Should the film be yellow by prolonged action of the developer, the use of a ten per cent. bath of acetate of soda preliminary to enlarging, for quite a quarter of an hour, will render the film pliable and yielding, whether developed by pyro-ammonia or hydroquinone. If in doubt as to which has been used, the bath may still be used, as it has no deleterious effect on the film. Should the slightest yellowness be left in the film, it should be cleared in the hydrochloric acid clearing bath.

The developers most suitable are pyro-ammonia, using citric acid as preservative. Hydroquinone, any formula, works well, though the carbonates are to be preferred to the hydrates in the accelerator, eikonogen and mixed developers of this class. The developers least suited are the pyro-potash and pyro-ammonia, containing sulphite of soda. This is useful to bear in mind, as they are the best developers for stripping and reversing without enlargement for mechanical processes.

To strip the film without enlarging, the plate should be soaked in water and placed in a very weak solution. When quite free, transfer to a dish of clean water, soak for a few minutes, and then change the water; each change will reduce the slight enlargement. The use of methylated spirit we cannot recommend, as it makes a brittle film, destroying its adhesiveness. The transferred film should not be more than the thickness of the glass, or, in other words, the sixteenth of an inch, greater than the original, and there should be absolutely no reduction of the image.

Societies' Meetings.

Aberdeenshire.—This Association held its monthly meeting on the 26th ult., Mr. Lindsay, one of the Vice-Presidents, in the chair. The Secretary (Mr. Brodie) brought up the subject of iron printing with special reference to what is known as the ferro-prussiate or blue process, the advantages and defects of which he briefly discussed. He noted that great difficulty was experienced by amateurs in obtaining paper of as good quality say as that which is supplied direct from the dealers for the purpose of copying drawings, and he suggested that surely the retailers of the paper, which is entirely of foreign manufacture, palmed off upon the amateurs their old and deteriorated stocks. An interesting conversation on the question followed. The company afterwards adjourned to the dark-room, where Mr. Main, a member of committee, gave a practical demonstration in platinum printing, employing the hot bath process, by means of which he developed a number of prints. The demonstration was of interest chiefly as showing how rapidly prints could by this process be produced, and how artistic are the results which platinum is fitted to yield.

Cleckheaton.—A meeting was held on the 19th ult., Dr. Sutherland in the chair. The subject for the Monthly Competition was "Flowers." There were eleven exhibits, and the prize was awarded to Herbert Jackson. Mr. E. Hirst then read a paper on Stereoscopic Photography. The paper was illustrated with diagrams on the black-

board, and was treated in a most able and instructive manner. Upwards of sixty stereoscopic examples were shown, and a most enjoyable evening was spent.

East London.—General meeting 26th ult., Mr. Pasco, President, in the chair. It was definitely settled that the Society would offer a silver medal for first prize, a bronze medal for second prize, and a certificate for third prize for the open class (amateur) in general photography at the exhibition to be held in October, particulars of which will be published in a few days. After the usual business of the evening was concluded, a set of competition prints, kindly lent by the Editor of the AMATEUR PHOTOGRAPHER, was laid before the members, the particulars of each print being read out from the AMATEUR PHOTOGRAPHER Supplement, which proved both interesting and useful.

Hackney.—On the 26th ult., Mr. Bruce J. Capel in the chair, work done by Messrs. Grant, Gosling, Nunn, and Roberts, and a hand-camera made by Mr. Dean were exhibited. Mr. Sodeau showed an enlarged lantern slide negative 4½ in. square; method employed was that of Mr. Foulkes-Winkes—Soak for five minutes in 1 oz. hydrochloric acid, 10 oz. water, 10 oz. sat. alum solution; the film will then float off glass. To enlarge, immerse in 1 oz. hydrochloric acid to 20 oz. water; then float on plain glass, support and dry. Mr. H. Smith showed Beauchamp's patent metal dark slide for hand-cameras. The Chairman then called upon Mr. Foulkes-Winkes, who showed and explained several novelties, viz., album constructed to receive unmounted prints, new changing box for plates or films, and the binocular pantoscope with chromoscope attached.

Liverpool Camera Club.—The usual meeting was held on 27th ult., Dr. Cecil Webb presiding. The Secretary (Mr. Tansley) exhibited and explained the working of one of Messrs. G. Houghton and Son's Shuttle hand cameras, which had been kindly sent for exhibition by the makers. The camera was greatly admired for its simplicity in working, but the price is rather above the average. Reports of the club outing to Eastham and the drive through Cheshire were read by Messrs. Hawkins and Stuart respectively. The next business was an exhibition of prints and discussion upon the merits of Messrs. Eastman's gelatino-chloride paper. After many expressions of opinion and much criticism, the following resolution was passed: "That the Club is of opinion that Messrs. Eastman's gelatino-chloride is an excellent paper, both for printing and toning purposes, and gives good results with the sulpho-cyanide bath, which the members have used more than the Eastman formula. But when using the sulpho-cyanide bath it does not strip easily from the glass when squeegeed down, and even this has occurred when using the bath recommended by Messrs. Eastman." It was resolved to have a Club picnic in September, and a sub committee was formed to arrange details.

Liverpool.—This very popular association has just opened its new and magnificently furnished rooms in Eberle Street, and on the 28th ult. the first meeting was held there. Mr. B. J. Sayce preside and there was a large attendance of members. The building is illuminated with the electric light, has a telephone, a studio, and several dark-rooms, possessing every convenience for the carrying on of the art of photography. Among the new members elected on Thursday night were Philip H. Nosworthy, Archibald Douglas, Mrs. C. Morrison, and R. Lawson. Mr. B. J. Sayce gave a report of the excursion to Emral and Erbistock, which took place on the 24th ult., at which thirty-six members and friends were present. About 120 exposures were made, some of the work, which was very beautiful, being shown during the evening, Mr. P. Bebbington, of 12, Cornbrook Park Road, Chester Road, Manchester, attended and explained his novel "Trafford" camera. Mr. Paul Lange showed his new American 5 by 4 camera, and Mr. Sanders, of Mount Pleasant, exhibited his novel and ingenious opera-glass camera, capable of making twenty-four exposures, as well as being useful as a telescope. The Eastman Company's new printing-out paper, and the Paget Prize Plate Company's sample packet of plates were distributed to the members. Mr. Lange gave a practical and enjoyable demonstration of the Platinotype Company's new cold-bath process, with the use of glycerine and brush manipulation. At the close the Chairman spoke of the arduous work done by Mr. J. Woolfall in arranging the new premises, which would prove of incalculable value to the members. The membership is now 300, and is increasing every month. Mr. John H. Welch, in the absence of Mr. Illingworth, the Secretary, conducted the proceedings, which were highly enjoyed. A vote of thanks to the various gentlemen who took part in the evening's illustrations concluded the proceedings.

SOCIETIES' FIXTURES.

Aug. 5.—CROYDON.
„ 5.—LEWISHAM.—"Hand Camera Work," by Mr. H. L. Davis.
„ 5.—RICHMOND.—Informal Meeting.
„ 6.—PLYMOUTH.—Excursion to Lopwell.
„ 6.—PAISLEY.—Excursion to Kilmarnock.
„ 6.—PEOPLE'S PALACE.—Outing, London Bridge to Greenwich
„ 6.—CARDIFF.—Ramble to Newport Canal.
„ 6.—WARRINGTON.—Ramble to Halton and Preston Brook.
„ 6.—WEST LONDON.—Excursion to West Drayton.
„ 9.—HACKNEY.—"The Stereoscope," by W. P. Dando.
„ 11.—WARRINGTON.—Ramble to Belle Vue.
„ 12.—RICHMOND.—Discussion on Development.
„ 12.—HOLBORN.—Informal Meeting.
„ 13.—HACKNEY.—Excursion to Theydon Bois.
„ 13.—RICHMOND.—Excursion to Limpsfield.
„ 13.—OLDHAM.—Excursion to Knutsford.
„ 13.—HOLBORN.—Excursion to Chislehurst.
„ 13.—CARDIFF.—Excursion to Tredegar Park.
„ 13.—NORTHAMPTON.—Whiston.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5779. **Hare's Camera.** — Should be obliged for information how to use Hare's camera, with two side wings or flaps, named Cireb.—AGNOSTIC.

5780. **Hunstanton.**— Would any of your readers tell me of any places of interest near Hunstanton and Lynn? Am going to stay at Snettisham, Norfolk. And if any dark-rooom is available near there? There is none given in "Ilford Manual" at Hunstanton or Lynn. Any information will be gratefully received. —TRIX.

5781. **Cresco-Fylma.**—What apparatus is required for enlarging with Cresco-Fylma solution? Is it easily worked?—G. D.

5782. **Llandudno.**—Will some reader kindly give addresses of reasonable, respectable lodgings in Llandudno, Bettws-y coed, Windermere, and Lakeside?—G. D.

5783. **Mountant.**—Would any reader of AMATEUR PHOTOGRAPHER inform me best mountant for prints? I have used starch, and when dry the corners begin to come unstuck and curl.—CANTAB.

5784. **Mounting Ilford P.O.P.**—Could any reader inform me of a simple, satisfactory way of mounting prints on Ilford P.O.P., as I have great difficulty in preventing stains or marks getting on the surface? This paper to me appears much more troublesome to mount after being accustomed to ordinary silver paper, which I could damp previous to mounting, which would cause the prints to lie quite flat, which I am told must not be done with Ilford P.O.P.—F. W. G.

5785. **Glaze on Prints.**—I wish to obtain a brilliant glaze or gloss on photographs printed on Ilford P.O.P. without the ordinary process of squeegeeing on glass plate, etc. Could anyone oblige me with a formula for making a kind of varnish that could be placed on the prints with a brush that would have the desired effect? Would the liquid sold by J. Fallowfield, entitled Tylar's Brilliantine, be satisfactory for this purpose?—F. W. J.

5786. **Opera-Glass Lenses.**—Will any reader kindly tell me whether the lenses from an opera-glass can be used for a hand-camera, and if so, how should they be arranged?—W. A. F.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

ANSWERS.

5776. **Bromide Paper Developer.**—Following is good for bromide paper:—

No. 1.

Quinol	154 gr.
Sod. sulphite	437 „
Sulphurous acid	20 minims
Distilled water	to make 10 oz.

No. 2.

Sodium carbonate	1,300 gr.
Pot. hydrate	154 „
„ bromide	20 „
Distilled water	to make 10 oz.

Mix in equal parts, and dilute with three times the quantity of water.

Clearing Solution.

Acetic acid	2½ drm.
Water	80 oz.

—INQUISITIVE.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

LIVERPUDLIAN.—The set you name is quite satisfactory. If you purchase secondhand through our "Sale and Exchange" use the deposit system.

L. S. SMITH.—There is no dealer of that name now in Manchester, nor do we know of a successor. Almost any optician, Perken, Son, and Rayment, Wray, Taylor, Taylor, and Hobson, Crouch and Co., would alter mount and value lens for you.

H. A. SALWAY.—Depth of focus, the particular quality you require, is dependent on length of focus and aperture, and we cannot suggest any lens other than the one you have, which without stopping down would give you greater depth of focus.

NEMO.—The stains may be due either to not rocking the plate during development, to not washing the plate well after developing, or to using an alum bath without washing—or to imperfect fixation. We can hardly give any advice without seeing negative.

W. T. TUCKER.—The Post Office had no right to charge 2d. for the enclosure. Print duly received.

H. J. FULLJAMES.—The fault of brush marks is due

to your using too much mountant. The print would be alright if rolled. The mounted print is over-toned, slightly over-printed, and the blank white sky wants breaking up with suitable clouds. "Shoreham Church" would be much improved by cutting off the path on the right. It is slightly over-toned, otherwise good technical work.

W. HOLT.—Thanks for letter.

H. BRYANS.—(1) You used your developer too strong; 1 part Rodinal, water 80 parts, bromide 10 per cent. solution 10 drops. (2) The tone is very good, but both show grey fog from too strong developer. (3) We have not forgotten your print, but have been unable to get a decent result from it.

NEVELLE.—(1) Intensify with mercury, bichloride, and ammonia. (2) In developing your plates use the pyro and ammonia, full strength, with a little extra bromide if you are certain of correct exposure; if not, develop slowly, adding the ammonia by degrees. Stick to your half-plate for general all-round work and touring; it is certainly the most convenient size.

J. N. R.—The bath should be alkaline; add 30 gr. of bicarbonate of soda to the gold solution, and then add to the bath; if acid, then add some more soda.

H. G. HAMMOND SPENCER.—Thanks for your letter. Shall hope to see some good work on your return.

HENDON.—Letter received; will answer by post.

TRIX.—(1) The only way to get over the difficulty is to shade the landscape when printed dark enough, and allow sky to go on printing. (2) The P. S. G. B. Exhibition is held in the Gallery of the Society of Water-Colours, 5, Pall Mall East. It is usually considered the best of the year. We will answer your letter by post.

MRS. M. M. POLLARD.—No criticism has yet appeared. If you will send prints up we will send you a detailed criticism of them all, as the Special Number will not be issued for some time

A. JANE.—(1) We could not allow you to enter our competitions under the conditions you name. (2) We cannot answer this question, because we have not made comparative tests. (3) If your chief work is portraiture stick to the portrait lens, and if necessary obtain a cheap R.R. (4) The plates named are excellent, and we like them very much indeed. (5) Your idea is not new, and there is no danger of hurting the film as long as the velvet does not press too heavily on it.

CANTAB.—We answer query next week.

H. S. JEVONS.—You would find some useful hints as to work at Portmadoc in the AMATEUR PHOTOGRAPHER "Annual." T. Jenkins, Medical Hall, has dark-room.

F. C. LAMBERT.—The precipitate is probably a mixture of iron and platinum.

A. CAMPBELL.—Many thanks for note, which goes in

ENQUIRER.—Keep the paper you have on walls now; there is no need to alter it, and it will reflect the light about the room.

C. MANFIELD.—(1) The boughs of trees on left hand side are offensive, and we should like to have seen a little more rushes in the foreground, and the focussing is not quite sharp; it also strikes us that the camera was not straight. (2) Under-printed and over-toned, and the lines of the bridge are not pleasing; a good picture could be made of this spot without the boat and occupant, and with some urchins fishings. (3) One-half of this print seems to have shifted in the frame, and consequently there are doubled outlines, otherwise good, though half an inch might be spared from foreground. (4) Bad, utterly without interest, and the trees on right and left of print do not add to its beauty. We shall be very glad at any time to help you.

W. BICKFORD.—We can hardly judge from the print you send what is the matter; will you please send up a negative? We should think you are under-exposing, fogging the plates in the developer, and over-printing. Let us also know what developer you use.

BLANCHE.—Letter by post.

MISS L. RIDLEY.—Is Adams' Lightning tripod, p. viii., the one you mean?

A. DALTON.—We are afraid nothing can be done for your broken negative, but will write to our man about it.

Sale and Exchange.

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.**, *or a commission of* **2½ per cent.**, *upon the sale price of the apparatus.*

Background.—For sale, background, interior, new, very cheap.—James, 10, Mount Street, Camberwell Gate.

Cameras, etc.—Lancaster's quarter-plate Le Merveilleux, with chemicals, complete, bargain, 22s.—Mapleston, 95, Lordship Road, Stoke Newington, London, N.

5 by 4 Gotz patent camera, every possible movement, newest condition, a perfect instrument, three double backs with carriers, and complete set of film carriers, £4, cost £7 15s.—No. 320, office of this paper, 1, Creed Lane, E.C.

Whole-plate long extension Middlemiss camera, with three backs, in separate locked case, good condition, £5 10s.—Apply, S. N., 55, Vespan Road, W.

Dark Slides, etc.—Dark slides; six half good Instantographs, 6s. 6d. each; sent for approval.—Adams, Harold Wood, Essex.

Hand-camera, etc.—Houghton's Automatic, in good condition and excellent working order, rapid rectilinear lens, Thornton-Pickard shutter, carries 12 quarter-plates, instrument has done good work, price £5.—J. B. Hartness, 2, Royal Promenade, Clifton, Bristol.

No. 2 Kodak, cost £7, in perfect condition, complete with leather case and 30 exposures, will take £5 cash.—Parker, chemist, Scarboro'.

Lancaster's superior Omnigraph hand-camera, leather covered, best lens, iris diaphragms, and shutter, new this season, cost price, 31s. 6d., take 21s. 6d.—Hartley, Macaulay Road, Clapham, S W.

For sale, half-plate hand-camera, Swift's lens, Wollaston shutter, and roll-holder, covered morocco leather, like new, £10.—Further particulars from F. Bradley, Crescent House, Ilkley.

Griffiths' hand-camera, with three double dark slides and finder, in good condition, new last Christmas, price 15s., or what offers in exchange?—J. G. Harrison, 84, New Park Street, Darlington, Durham.

No. 1 Kodak, equal to new, eighty unexposed films, complete with leather case, will take £3, cost £5.—No. 318, office of this paper, 1, Creed Lane, London, E.C.

Dozen quarter-plate hand-camera sheaths, 4s.; hand-camera, quarter-plate, cost £3 15s., sell 40s.—Clarence Jones, Blackburn.

Kodak, No. 3, junior, quite new, with film, for 58 exposures, only used once, bargain £6 10s.—Hardcastle, Stonegate, York.

Hand-camera for twelve quarter-plates, three finders, one showing picture full size, rectigraph lens, covered with best morocco, equal to new, £3 5s.—Rev. J. Chapple, Lincoln.

Lenses, etc.—Half-plate rectilinear, iris diaphragms, Black Band, 18s.; 7 by 5 R R., movable hood, Waterhouse stops, finest quality, 21s.—L., 8, Kenilworth Road, Willesden Lane, London.

Doublet half-plates by Laverne, 22s.; Dubroni, 20s.; single iris diaphragm Lancaster, 15s.; quarter-plate Ross, 25s.; Jamin cabinet portrait, par excellence, 39s; approval; Ross Stereoscopic camera, six backs, leather case, 28s.—Lyne, London Road, Croydon.

Lancaster 10 by 8 rackwork landscape lens, instantaneous shutter, revolving diaphragm, complete, nearly new, price £1 5s.—Nelson, Main Street, Egremont.

Sets.—Half-plate outfit, with sundries, no reasonable offer refused.—10, Brighton Road, Stoke Newington, London, N.

Half-plate Instanto set, good as new, cost 84s., bargain, 67s. 6d.—Merrett, Russell Street, Stroud.

Half-plate camera by Morley (Light Model). Three double dark slides. With stand and case complete, £4 4s.—No. 319, office of this paper, 1, Creed Lane, E.C.

Bargain, Watson's 7½ by 5 Tourist camera, three slides, Eastman roller to fit, moveable partition for stereos and other accessories, leather case, price £5, cost more than double; also Casket, three R.R. lenses, making nine different foci from 5½ in. upwards, price £4, cost £7; on view, 54, Lime Street, City (Goy's).—No. 321, office of this paper, 1, Creed Lane, London, E.C.

Sundries.—A gentleman taking a caravan tour would like two others to join him.—F. Moore, Hagley, Hereford.

Portable studio for sale, 18 by 10 by 18, in eight sections, £10.—Photo, 134, High Street, Kingsland.

Shutter.—Thornton-Pickard time and instantaneous shutter, new condition, about 1¾ hood, 16s. 6d.—Ashby, Eglwysbach, Denbighshire.

WANTED.

Hand Camera. Wanted, hand-camera, 5 by 4, or quarter-plate, Eclipse pattern preferred.—Atkinson, Clonlec, Larne.

Lantern.—Wanted, good triple or biunial lantern, cheap, or first-class exchange.—James, 25, Brunswick Square, Camberwell.

Lenses, etc.—Wanted, battery quarter-plate lenses, half-plate kit, or Aptus Universal camera; exchange good tricycle.—Wiseman, Painswick, Glos.

Sets.—Wanted, first-class quarter-plate outfit complete, state maker's names and lowest price for cash.—"Alpha," care of Mr. Simpson, Bazaar, Windermere

Shutter.—Wanted, Sargeant's shutter about 2 in. hood.—Ashby, Eglwysbach, Denbighshire.

Bargains in Lenses.—Ross 10 by 8 wide-angle rectilinear, rotating, fine definition, with flap shutter, £3 10s.; 8 by 5 wide-angle lens, fitted rotating stops, *f*/16, rapid rectilinear, best condition, take 27s.; Ross' whole-plate rapid symmetrical, Waterhouse stops, works *f*/8, £4 12s. 6d.; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; whole-plate Suter No. 3, landscape rotating stops, about 12 in. focus, quite new, 37s. 6d., lowest; half-plate Dallmeyer rapid rectilinear, quite new, iris stops, movable hood, £4 17s. 6d.; cabinet portrait lens by Cox, rack focussing, Waterhouse stops, finest order, take 25s.; Mayfield's 7 by 5 rapid rectilinear, Waterhouse stops, covers well, 32s. 6d.; Wray's landscape, casket lenses, 5 in., 7½ in., and 10 in. focus, iris stops, quite new, £3 17s. 6d.; half-plate Lancaster's Instantograph lens, iris stops and instantaneous shutter, as new, 15s.; Lancaster's half-plate wide-angle lens, rotating stops, take 10s. 6d.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Rayment, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Cameras! Cameras! Cameras! Lenses! Lenses! Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, Corner Leadenhall Street, City (late Goy's Medium).

Bargains in Hand Cameras.—Adams Ideal hand-camera, carries twelve quarter-plates, finest rapid rectilinear lens, two finders, etc., as new, £5 17s. 6d.; Stienheil hand-camera, 9 by 12 centimetres, rapid rectilinear lens, two finders, shutters, carries twelve plates, hag changing, as new, take £4 10s, cost £10 10s.; Luzo hand-camera, by Robinson, Regent Street, carries 100 films, rapid rectilinear, finder, as new, in leather case, take 40s.; Optimus detective camera, by Perken, Son, and Rayment, Optimus rapid rectilinear lens, carries six ¼-plates, covered black leather, take £4 4s.; half-plate Rover, by Lancaster, quite new Iris stops, all same shutter finder, leather case, take £3 17s. 6d.; Optimus magazine hand-camera, carries twenty-three quarter-plates, fitted Euryscope rapid rectilinear lens, instantaneous roller blind shutter, two finders, as new, take £5 15s.; Lancaster's Omnigraph, covered leather, good lens and shutter, take 17s. 6d; and another, 15s.; Samuel's quarter-plate hand camera for twelve plates, quite new, rapid rectilinear lens, two finders, 32s. 6d.; All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

Bargains in Cameras and Sets.—Optimus whole-plate camera, leather bellows, reversing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterhouse stops, Thornton-Pickard shutter, three double dark slides, three-fold stand and case, £11 5s.; whole-plate Underwood instanto, wide-angle movement, leather bellows, double extension, rapid rectilinear lens, iris stops, fine definition, double slide, half-plate carrier and folding stand, as new, take £5 15s.; whole-plate camera by Hare, grand article, leather bellows, double extension, wide-angle movement, double slide, changing box, for 24 plates, also changing slide, Optimus rapid rectilinear lens, Waterhouse stops, brand new three-fold stand and case, take £10 17s. 6d.; half-plate 1891 Instanto graph camera, all latest improvements, Instantograph lens, iris stops, shutter, double slide, folding stand and case, take 72s. 6d., as new; half-plate Duchess camera, all latest movements, etc., Optimus rapid rectilinear lens, fine definition, Thornton-Pickard shutter (time and instantaneous), two double slides, three-fold stand and case, as new £7 5s.; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; quarter-plate special patent, brass bound, conical leather bellows, fitted four single slides, really good lens, folding stand and case, lowest 37s. 6d.; quarter-plate Underwood's instanto, finest order, changing box for 12 ¼-plates, good lens, rotating stops, one slide, folding-stand and case, 35s.; 1891 Instantograph camera, lens, shutter, slides, and folding stand, 32s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

GOOD OPPORTUNITY FOR AN AMATEUR desirous of commencing Business; capital required, £400. Business in large provincial town, returns £400; handsome shop and studio; all apparatus and requirements; carried on by a lady at present; good reason for disposal.—Apply, Reflex, office of this paper, 1, Creed Lane, E C.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 410. Vol. XVI.] FRIDAY, AUGUST 12, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Monday Afternoon "At Home" is discontinued for the present, but will be resumed on Monday the 5th of September.

Our Views.—A Find—Dark room at Llandudno—Brass-work for Universal Hand-Camera—Errors in the Annual—Photomnibus Competition—Notice.

Letters to the Editor.—A Trip to Chicago (Harris)—The Blister Fiend (Unsuccessful)—One Good Use for Spoilt Plates (S. E. Venn).

Catalogues.—Taylor, Taylor and Hobson.

Articles.—Photographic Procedure (Wall)—General and Photographic Chemistry (Conrad)—How to Make a Set of Photographic Apparatus (H. J.)—A Holiday in Norway—Magic Lantern Matters (W. I. Chadwick).

Apparatus.—Hannam's Mounts—The Developan—Adams's Club Album.

Societies' Meetings.—Bath—Hackney—Lewisham—N. Middlesex—Putney—Rochdale—Rotherham—S. London—Tunbridge Wells.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kinodom.....	Six Months,	5s. 6d.		Twelve Months,	10s. 10d.		
Postal Union	„	„	6s. 6d	„	„	13s. 0d.	
Out of Postal Union ..	„	„	7s. 9d.....	„	„	15s. 3d	

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 39.—"Sea Pieces or River Scenery." Latest day, August 22nd.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, September 16th.)

Mr. P. S. Cox, of the Vicarage, Lynmouth, informs us that he has found among the heather on the hill at Lynmouth "An Amateur Photographer's Ready Reckoner," by Viæ, containing a good many carefully-compiled notes of photographic exposures round Lynmouth and Ilfracombe. There is no name or address in the book, but the owner may have the same forwarded, on sending stamps to Mr. Cox to cover postage.

A printer's error in our note on the announcement of the opening of a dark-room at Llandudno has caused some little confusion. The notice stated that the rooms were open from 9 a.m. to 10 a.m., and our correspondent, the Hon. Secretary of the Llandudno Camera Club, writes us: "Already your notice has been of some service, as this morning (Saturday), our rooms were 'stormed' between 9 a.m. and 10 a.m., and it was only on our attendant assuring the amateur knights of the lens that the rooms would be open for thirteen hours instead of one hour that anything like order was restored." Our readers will therefore please note that the dark-room at Llandudno is open from 9 a.m. to 10 p.m.

Mr. J. Clarke, chemist, of 81, Parliament Street, Ramsey, Isle of Man, has fitted up a dark-room for the convenience of visitors, and keeps a full stock of plates, chemicals, etc.

In a book of the size of our 1892 "Annual" it would be a marvel if there were not a few typographical errors, which by some unfortunate circumstance slipped through. Our readers are requested, therefore, to make the following alterations:—On p. 221: "Jonathan Fallowfield, 146, Charing Cross Road, six doors from Oxford Street." On p. cxxii.: "Crouch's Special hand-camera lenses (largest working aperture, *f*/11);" obviously this should read, "Largest working aperture, *f*/5," an enormous difference, which it is only fair we should call attention to.

Jonathan Fallowfield, as is well known, after thirty-four years' sojourn in Lambeth, settled down at his present address, six doors from Oxford Street, in the hopes of getting more room for his ever-increasing stock and business, but he informed us some little time ago that even now his premises were not large enough.

MAJOR H. W. B. BRUNO, the author of the articles on "A Universal Hand-Camera," informs us that Mr. Park has had a large number of applications, including foreign orders, for sets of brass work for this camera, and Mr. Park is now ready to supply complete sets made from drawings supplied by Major Bruno.

THE illustration on p. 72 of our issue of 29th ult. was, unfortunately, through pressure on our space, inserted without any reference. The negative was taken by Alfred Ironside, of Sutton, age fifteen, who had never taken a photograph before, and was fortunate enough to gain the second prize of one guinea in the Photomnibus Competition, instituted by Mr. A. R. Womald. The following are the chief rules of the second competition:—

(1) All negatives must have been taken with the "Photomnibus" camera; any plate and any developer may be used. (2) No retouching allowed. (3) Prints may be by any process, and any number, not exceeding three, may be sent in by each competitor. (4) Prints must not be mounted, but must be attached to a piece of card by passing the four corners through four diagonal slits cut in the card for the purpose. (5) All prints must be sent in to Wormald and Co., Sutton, Surrey, before Monday, 31st October, together with the entrance form (see other side), duly filled up.

As most of our readers know, the Photomnibus is practically a pinhole camera; and those who wish to try this particular branch of photography, which in artistic hands leads to exceptionally fine results, should try this little apparatus.

WE wish to draw the attention of our readers to the following announcement:—

In no case will the Proprietors of the AMATEUR PHOTOGRAPHER undertake to buy or sell any goods on commission, nor will they be responsible for the safety of any negatives or prints sent to the Editor of the AMATEUR PHOTOGRAPHER or any purpose whatever, although all reasonable care will be taken of the same.

The Editor claims the right of refusing any print, lantern slide, etc., sent in for competition, without assigning any reason for such refusal.

Letters to the Editor.

A TRIP TO CHICAGO.

SIR,—I intend visiting the Chicago Exhibition, but shall certainly leave my photo gear at home if, as I understand, a duty is levied on it irrespective of its being used for ordinary amateur work. What is the use of the American clubs asking us to join them in photographic work, unless we receive a distinct denial of the impression which now so generally obtains that a heavy duty is charged by the Customs the other side. Perhaps you will insert this, so that something authoritative and certain may be forthcoming from those who have been across, and *who know*.
—Yours truly, CHARLES J. HARRIS.

* * * *

THE BLISTER FIEND.

SIR,—When I received your paper last Thursday morning, I was pleased to find the letter signed "The Baron," giving a cure for these unwelcome visitors. The reason I was pleased was that I had just taken some prints out of the washer and found several affected rather badly with that complaint, and I thought it might be the cause of my being able to save them.

I took the greatest care to follow his directions, except that I left the prints under two 56 lb. weights from Thursday one o'clock to Saturday five o'clock p.m. I removed the weights with a glad heart, thinking that I had at last found a cure for blisters, but they were, if anything, larger than when I took them out of the washer.

I write hoping you will insert this, and that it may meet the eye of "The Baron," and if he would say whether I used too much pressure, too long under the weights, or whether some important detail was omitted in his letter. Thanking you in anticipation, I remain yours truly, UNSUCCESSFUL.

ONE GOOD USE FOR SPOILT PLATES.

SIR,—When a dry plate is considered hopelessly fogged or worthless for use in the camera, place it under a negative and print in a frame in sunlight. When the image equals the density of a correctly exposed platinotype, develop and fix in the usual way, and the result will be a good *reversed negative*. Though exposed to daylight for half an hour before being placed in the frame, it will show no veil or fog.

It is convenient to cut the plate in two about half an inch from either end, so that the smaller snip of glass may be occasionally removed and the depth of printing ascertained.

The discovery is Dr. Jumeaux's, whose simple solution developer (eikonogen) is a very useful one. S. E. VENN.

Catalogues.

PHOTOGRAPHIC LENSES. Taylor, Taylor and Hobson, 6, Southampton Street, High Holborn, and Slate Street Works, Leicester.

This is something more than a mere price list; it contains very useful articles on "The Principles of a Lens's Action," and "How to Preserve Lenses;" besides these each series of lens is illustrated and brief instructive notes added, explaining the special purposes for which the lenses are constructed.

The special novelty now included is a new form of detective lens which has been introduced to meet the demand for a cheap lens, but it is needless to say that is also of excellent workmanship. The new lens has a focus of 5·1 in., with a working aperture of *f*/8, and is fitted with wheel diaphragms. We are very glad to see that this firm lay special stress upon the adoption of standard screw fittings, and set the example themselves in adopting the same, not only for flanges but also for adaptors, and actually make standard lens caps. To the man of many lenses, the possibility of fitting three or four lenses to one front is a great convenience, and the adoption of the standard screw fittings is a step in the right direction.

Since the issuing of the last price list, Messrs. Taylor, Taylor, and Hobson, have found it necessary to make extensive alterations and additions to their works, for they confine their attention not entirely to lenses, but make also levels, finders, and focussing magnifiers, and are sole agents for the well-known Blair cameras.

J. H. BALDOCK AND CO., 3, High Street, S. Norwood, S E.

A well compiled and illustrated price list, containing all the requisite materials and apparatus for photographic workers' use. A dark-room is also offered for use of customers.

Amateur Photographic Association.—His Highness the Duke of Teck in the chair, a Council meeting to award the prizes was held on 27th ult. The following members were elected:—The Viscount Maitland, Mrs. E. G. Wrigley, Messrs. T. K. Mellor, E. F. Scougal, M.D, A. H. D. Steel, Craigie, E. Kennard, W. Jerome Harrison, and Miss E. A. Sykes. Mr. Melhuish, the Hon. Secretary, then laid before the meeting the pictures for the current year, which had been arranged and classified by Mr. Glaisher. There are 152 pictures in Class 1., being more first-class pictures than had been contributed in any previous year. They are as follows: C. Stephens, 6; Lord de Ros, 2; R. Murray, 9; F. E. Currey, 2; W. S. Hobson, 18; Major Board, 1; General Sladen, 1; R. O. Milne, 18; R. Leventhorpe, 12; M. de Dechy, 6; W. Gaddum, 3; J. C. Cohen, 6; Colonel Foster, 3; F. G. Smart, 7; The Vicomte de Condeixa, 9; H. O. Hutchinson, 5; F. Wrigley, 2; Miss Mahon, 3; A. R. Dresser, 9; H. Emmons, 3; E. F. Scougal, M D., 1; The Viscount Maitland, 8; and W. Jerome Harrison, 18. The rest of the pictures were comprised in Classes 2, 3, and 4. The following prizes were awarded:—First prize, to the Vicomte de Condeixa, a large silver goblet; R. O. Milne, a silver goblet; C. Stephens, an album, handsomely bound; M. de Dechy, a large silver medal; A. R. Dresser, an album, handsomely bound; The Viscount Maitland, a medal; W. S. Hobson, a silver goblet; R. Leventhorpe, a picture in frame; W. J. Harrison, a large silver medal; F. G. Smart, an album, handsomely bound; Colonel Foster, a picture in frame; J. C. Cohen, a medal; H. O. Hutchinson, an album, handsomely bound; W. Gaddum, a medal; H. Emmons, a medal; R. Murray, a medal. A vote of thanks was passed to Mr. Glaisher for the time and care he had bestowed on the arrangement and classification of the pictures. The pictures are now on view at the offices of the Society, 58, Pall Mall (opposite Marlborough House).

Photographic Procedure.

By E. J. Wall,

Author of the "Dictionary of Photography."

Section VI.

DEVELOPERS AND DEVELOPMENT.

(*Continued from page* 76.)

In treating the subject of this section it would be better possibly for some of my readers if each developer in general use be considered in turn. The developers now used may be briefly stated, as ferrous oxalate, pyrogallol, hydroquinone, eikonogen, and paramidophenol.

But before treating of one particular developer we may say that there are one or two statements which apply to all the agents. In each developer there are: (1) the developing agent proper; (2) the restrainer, the action of which is practically to prevent the formation of fog; (3) the accelerator, which hastens the action of the developing agent.

Ferrous Oxalate Developer.—This developer is considerably less used now than it was even two or three years ago; its greatest adherents were the Continental workers, but with the introduction of hydroquinone even they have abandoned its use in favour of the latter agent, to a great extent.

The main features of the ferrous oxalate developer are that it has not much tendency to reduce the haloid salt of silver which has not been affected by light, and also that the colour of the image, a blue black, presents less obstacle to the passage of light than the brown image of pyro-developed negatives, and it is therefore necessary to carry development a great deal further than when using pyro.

It is a generally accepted axiom that there is far less control over the action of the ferrous-oxalate developer than with other agents, that, in fact, it is not easy to compensate for errors in exposure by altering the proportions of the constituents of the developer. This is to a great extent true, although in intelligent hands ferrous oxalate may be modified to suit particular cases. It will be noted that I have here practically disregarded Messrs. Hurter and Driffield's researches, which they state have proved that it is impossible to correct or alter the results obtained by exposure. This I have done on purpose, for a reason which we shall come to later on when talking of pyro development.

We have already given the formulæ for the ferrous oxalate developer (pages 464) but for convenience sake they are again included here.

I. One-Solution Developer.

Ferrous oxalate (dry)	1 oz.
Neutral oxalate of potash	4 „
Distilled water	12 ozs.

Allow to stand for at least twelve hours, shaking occasionally, then decant from the undissolved ferrous oxalate.

II. Two-Solution Developer.

Solution A.

Neutral oxalate of potash	1 part
Distilled water	4 parts
Sulphuric acid, *q. s.*	

Solution B.

Ferrous sulphate	1 part
Distilled water	4 parts
Sulphuric acid, *q. s.*	

If we take the ordinary method of making ferrous oxalate —that is the second formula, in two solutions—there are one or two points to consider in the actual making and keeping of the developer. The oxalate solution is easy to make and easy to keep. If distilled water at about 70 deg. to 80 deg. F. be used, the salt will dissolve without much trouble, with occasional shaking. The solution should be slightly acid, which may be effected by adding a few crystals of oxalic acid, a little powdered tartaric or citric acid, though these two latter act slightly as restrainers, or sulphuric acid may be used. The solution will keep indefinitely if a well corked or stoppered bottle be used. If ordinary tap water be used for making this solution, a white chalky precipitate (oxalate of lime) is formed, which settles to the bottom of the bottle, and may be filtered out, or the solution decanted from it.

The solution of sulphate of iron or ferrous sulphate requires a little more care in preparation. The iron salt should be in bright emerald green crystals, without any adherent brown powder on their surfaces; if the latter be present it is advisable to allow a little extra salt, about 10 or 20 gr. to every ounce, and, placing the crystals on a piece of thin muslin stretched over the mouth of a tumbler or graduate, wash them once or twice by pouring a little water over them. Distilled water should be used always for making the iron solution, or else it very rapidly becomes oxidised and useless. It is always a somewhat difficult matter to keep the iron solution, and many have been the expedients suggested, such as pouring oil or paraffin on the top of the solution, and drawing the supply from the bottom of the solution. The best method of keeping it is undoubtedly to pour it whilst still warm into 1 oz. phials, to fill the same quite full, and then cork; by this means there will practically be no enclosed oxygen, and so small a quantity as one ounce will be soon used up. The iron solution should always be acidulated, preferably with sulphuric acid, one or two drops to the ounce being sufficient.

The usual proportion of the two solutions is one part of iron solution to four parts of oxalate; stronger than this it is not advisable to use, or else a yellow sandy deposit of ferrous oxalate is precipitated, this deposition also taking place if the oxalate is weak. When this developer is mixed it is also essential that the iron should be added to the oxalate, and not *vice versa*, for the same reason.

For a correctly exposed plate this developer may be used without any further addition, and the image will appear in from ten to thirty seconds, and development be completed in about three or four minutes, though, of course, these times are only approximate and differ with the character of the emulsion. With some plates an addition of a restrainer, such as bromide of potassium, is advisable, and from ten to twenty drops of a ten per cent solution of this salt may be added to every ounce of mixed developer. It is a very good method of working to apply the developer to the plate, and rock the dish and allow development to proceed till the whole or nearly the whole of the image is visible, and then to measure out the requisite quantity of bromide solution and pour the developer from the dish into the graduate, and then pour back on to the plate, and allow development to proceed. When bromide is used, the negatives are a little richer in contrast, take rather longer to develop, and the shadows clearer. In no case should development be stopped till the details in the shadows are well visible, and it may safely be said that in most cases the surface of the plate should be almost entirely black, and the image lost to view, except by holding it up to the light.

An alternative and tentative method of development may be used, and in this case it is advisable to commence development with the full quantity of oxalate solution, but to add only one-fourth or one-sixth of the iron, and then add the remainder as development proceeds.

DEVELOPING UNDER-EXPOSED PLATES.

The best method of developing much under-exposed plates or snap-shots is to soak them first of all in a very weak solution of hyposulphite of soda 1 part, water 3,000 parts, or 1 gr. of hyposulphite in 7 oz. of distilled water, for one minute, and then to drain the plate slightly and apply the ordinary ferrous oxalate developer with 1 gr. of bromide to every ounce. The image appears very quickly, but development has to be rather prolonged to gain sufficient density.

When from its behaviour in the ordinary developer it is found that a plate has been slightly under-exposed, hyposulphite may be added to the developer in the proportion of three drops of a 1 in 200 solution to every ounce of developer.

It is almost superfluous to add that with a strongly under-exposed plate it is almost impossible even by these means to obtain sufficient detail, and possibly, or at least I think, there is less chance of saving under-exposed plates with ferrous oxalate developer than with pyro or other agents.

DEVELOPING OVER-EXPOSED PLATES.

As with pyro development, the best method of saving over-exposed plates is to soak them first of all in a solution of bromide of potassium about 2 gr. to the ounce of water, and then without rinsing to apply a developer weak in iron composed of the normal quantity of oxalate and one-half the quantity of iron—that is, one part of iron to eight parts of oxalate. Or if with great over-exposure, it is advisable to use old developer first.

With regard to the old, once-used developer, it is as well not to throw this away, but keep it in a separate bottle, as it may not only be utilised as a very powerful restrainer, but even for ordinary work it is useful, as will be seen later, and it may also be used for bromide paper and lantern slides, and a very good reducer may be made from it.

DEVELOPING PLATES THE EXPOSURE OF WHICH IS UNKNOWN.

It often happens that we are in doubt as to whether we have correctly exposed our plates, and it is advisable then to hasten slowly. In such cases the old, once-used developer comes in very handy. If this be applied to the plate, and the image appears normally, we may continue development as long as the details appear and the image gains in density. Should, however, the detail or density hang fire, then one-third or half the quantity of fresh developer may be added. In such a case as this the one-solution oxalate developer comes in useful and serves to strengthen the old developer.

(To be continued.)

Warrington.—The usual monthly meeting was held on the 5th inst., a large number of members being present. In the absence of the President, Mr. T. J. Down, Mr. H. N. Houghton presided. A practical demonstration on the working of the Ilford printing-out paper was given by Mr. J. H. Brown Penketh, commencing first by giving its history, the manufacture, the advantages over other silver papers, rules to be observed, printing, toning, fixing, defects, and remedies, etc. Prints were passed round showing the various colours obtained through injudicious handling, such as stained fingers, dirty dishes, etc. Two prints were next washed, toned, and dried on glass with successful results. Mr. Lawson, of Newton-le-Willows, another member, introduced to the meeting his Patent Limelight Saturator, as shown before the London Lantern Society. Judging from the ingenious make and its simple action, it bids well for success, especially to those lanternists who are in the habit of exhibiting in country places where hydrogen gas cannot be obtained, the saturator doing away with the gas altogether. Mr. Lawson is making a new one on the same lines, that can be made to fit into any lantern. After the usual vote of thanks to the essayists, an enjoyable and interesting meeting was brought to a close. Mr. W. H. Gyton was elected a member of the society.

General and Photographic Chemistry.

BY E. C. CONRAD, F.C.S.

II.—GENERAL LAWS AND TERMS.

(Continued from page 86.)

Organic and Inorganic Chemistry.—Chemistry embraces such a large number of substances that it is advantageous to divide them into separate classes. The term organic chemistry has been applied to those compounds which contain carbon (with a few exceptions), and includes all those substances that exist ready formed in animal and vegetable organisms, as well as a far larger number which are manufactured by chemical processes. Those substances that do not contain carbon, and most of which may be said to have a mineral origin, are classed as inorganic compounds and studied under that branch of chemistry.

These divisions are quite arbitrary, there being no difference in the laws governing the two classes.

Metals and Non-metals.—The elements themselves are also arbitrarily divided into two classes, called metals and non-metals. The first class, containing those that have a bright lustre, are good conductors of heat and electricity, and are of high specific gravity. They are all, with the exception of mercury, solids, at ordinary temperatures, and they all combine with oxygen and sulphur. The second class contains the gases and such solids as carbon and sulphur.

There are 48 metals and 15 non-metals, reckoning arsenic, in the second class.

Oxides and Sulphides.—The union of the elements with oxygen produces a class of bodies called oxides, and their union with sulphur produces a class called sulphides.

Anhydrides.—Some oxides, on being dissolved in water, produce acid liquids; these when dry are called anhydrides. This term is also used to express anything in a completely dry state absolutely free from water.

Carbonates.—Oxygen and carbon unite together to form an acid radical (CO_2) called carbon dioxide in an anhydrous condition, and in solution carbonic acid, and this radical combines with many oxides to form a series of salts called carbonates, *e.g.*, sodium carbonate, Na_2O,CO_2 or Na_2CO_3.

Acids and Bases.—Those bodies which turn vegetable blue solutions, red, and decompose carbonates, and contain hydrogen capable of being replaced, are termed acids. Any metal that replaces hydrogen in an acid is called a base.

Salts.—The compound produced by the union of a base with an acid is called a salt. Common salt can be taken as a type of these compounds; it is a union of the metal sodium with the chlorine of hydrochloric acid, $Na + HCl = NaCl + H$.

Nomenclature of Acids and Salts.—Although all acids must contain replaceable hydrogen, yet they are usually named from the amount of oxygen contained in the acid radical, expressed by a terminal or prefix; the normal acid being distinguished by the termination *ic*, the one immediately below it in amount of oxygen ending in *ous*, while the ones above or below this have the prefixes *per* (over or above), and *hypo* (under or lower). The salts are always formed by changing the *ic* into *ate* and the *ous* into *ite*.

A list of the acids containing chlorine and the resulting sodium salts will explain this.

Hypochlorous acid		$HClO$	Sodium	hypochlorite
Chlorous	,,	$HClO_2$	,,	chlorite
Chloric	,,	$HClO_3$	,,	chlorate
Perchloric	,,	$HClO_4$	,,	perchlorate

The acids that are composed of hydrogen and another element all end in *ic*, and the salts take the termination *ide*.

Hydrochloric acid, HCl; sodium chloride, NaCl; silver chloride AgCl.

Empirical Formulæ.—If we have the total percentage of all the elements in a compound, its formula can be calculated in the following way. An analysis of sulphuric acid gives the following percentage:

			A.	B.
2·04	per cent of	hydrogen ...	2·04 ...	2
32·65	„ „	sulphur ...	1·02 ...	1
65·31	„ „	oxygen ...	4·08 ...	4
100·00				

Now if the percentage of each element is divided by its atomic weight (viz., the $\frac{2·04}{1}$, the $\frac{32·65}{32}$, and the $\frac{65·31)}{16}$, the figures in column A are obtained, and the lowest of those (in this instance the sulphur) is divided into itself and all the others (to the nearest whole number), the results in column B are obtained, viz., 2 of hydrogen, 1 of sulphur, and 4 of oxygen, or H_2SO_4, which is the experimental or empirical formula of sulphuric acid. When the formula of a compound is known, its percentage composition can be calculated by multiplying the total combining weight of each element by 100, and dividing this by the combining weight of the compound. Calculate the percentage of oxygen in sulphuric acid thus, $\frac{4 \times 16 \times 100.}{98}$

Allotropy and Isomerism.—Many of the elements are found to exist under different conditions, which often show a wide divergence in physical properties and chemical activity. Thus sulphur and phosphorus can be obtained in several modifications, which will be discussed under their respective heads. It is usual to call the less important or latest discovered varieties of an element its *allotropic* form, or *allotrope*.

There are also a large number of compounds which exhibit the same peculiarity. Thus there are two pent-oxides of antimony, Sb_2O_5, having the same empirical formula but different chemical and physical properties. They are said to be *isomers* one of the other; most instances occur among the carbon compounds.

Temperature and Pressure.—Both temperature and pressure affect chemical action and also the volume or mass, and therefore the weight of all substances. Unless otherwise stated, all experiments are supposed to be conducted at the standard temperature and pressure, which are taken as 0° C.=32° F. for temperature, and 760 millimetres = 29·92 inches of mercury for pressure.

The temperature is measured by a thermometer, which is, roughly speaking, a narrow tube closed at both ends, free from air, and containing some substance that expands and contracts equally for all alterations of temperature. They are usually made of glass, and filled with mercury or alcohol, and graduated into degrees, or tenths or fifths of degrees.

There are three scales in general use, namely, the Centigrade, Fahrenheit, and Reaumur. The Centigrade takes its unit from the temperature of frozen water, and its maximum from boiling water, and divides the interval into 100 divisions or degrees. The Reaumur takes the same maximum and minimum, but divides the interval into 80 degrees. The Fahrenheit takes its maximum from boiling water the same as the others, but its minimum from the temperature of a freezing mixture of snow and salt, and divides the interval into 212 degrees. The relation of the degrees on the Fahrenheit to those on the Centigrade is as 9 to 5, between Centigrade and Reaumur as 5 to 4, and the formula for converting Fahrenheit into Centigrade is $C = \frac{5(F-32)}{9}$ of Centigrade into Fahrenheit $F = \frac{9C}{5} + 32$.

The Centigrade scale is the most rational, and the one usually adopted for scientific purposes. In practice it is a matter of indifference which is used, provided it is an accurate instrument.

The pressure is measured by a barometer, which is usually a glass tube closed at one end, and about 33 inches long, filled with mercury, and inverted into a cup also containing mercury, or sometimes with the open end curved up. The height of the mercury in the tube will vary with the pressure of the air on the open end.

Gases are more particularly affected by alterations of temperature and pressure. All gases expand for an increase, or contract for a decrease of temperature (the pressure being equal) $\frac{1}{273}$ of their volume for every degree Centigrade. Thus 273 volumes of a gas at 0° C. will be 274 volumes at 1° C. The volume of a gas (the temperature being the same) varies inversely as the pressure; that is, the volume increases for a decrease of pressure, and decreases for an increase of pressure.

Specific Gravity.—The specific weight of a substance is its weight in comparison with the weight of a similar bulk of another substance. Water is the substance usually employed, and substances are quoted as being lighter or heavier than water, expressed by a number called its specific gravity. Thus water = 1,000, ether = ·720, sulphuric acid = 1·842 at 15° C., the usual temperature for taking specific gravities.

To obtain the specific gravity with accuracy a chemical balance must be used, and care in manipulation, and attention to many details, are required.

For ordinary purposes a hydrometer will be sufficiently accurate.

For further particulars of the above, and other branches of chemical physics, the larger manuals must be consulted.

List of the Elements, with their Atomic Weights and Valences.

Aluminium	Al	27·3	iv	Molybdenum.	Mo	96	vi
Antimony	Sb	122·3	v	Nickel	Ni	58·7	iv
*Arsenic	As	75·2	v	Niobium	Nb	94	v
Barium	Ba	137·2	ii	*Nitrogen	N	14	iii
Bismuth	Bi	210	v	Osmium	Os	199·1	vi
*Boron	B	11	iii	*Oxygen	O	16	ii
*Bromine	Br	80	i	Palladium	Pd	106·6	ii
Cadmium	Cd	112	ii	*Phosphorus	P	31	v
Calcium	Ca	40	ii	Platinum	Pt	197·2	iv
*Carbon	C	12	iv	Potassium	K	39·1	i
Cæsium	Cs	133	i	Rhodium	Rh	104·2	iii
Cerium	Ce	92·2	iv	Rubidium	Rb	85·4	i
*Chlorine	Cl	35·5	i	Ruthenium	Ru	104·4	vi
Chromium	Cr	52·1	vi	*Selenium	Se	79·5	iv
Cobalt	Co	58·7	iv	Silver	Ag	107·9	i
Copper	Cu	63·1	ii	*Silicon	Si	28·1	iv
Didymium	D	95	iii	Sodium	Na	23	i
Erbium	E	112·6	iii	Strontium	Sr	87·5	ii
*Fluorine	F	19	i	*Sulphur	S	32	vi
Glucinum	Gl	9·3	ii	Tantalum	Ta	182·3	v
Gold	Au	196·7	iii	*Tellurium	Te	128	vi
*Hydrogen	H	1	i	Thallium	Tl	203·5	i
Indium	In	113·4	iii	Thorium	Th	115·7	iv
*Iodine	I	126·9	i	Tin	Sn	118·1	iv
Iridium	Ir	196·9	iv	Titanium	Ti	50	iv
Iron	Fe	56	vi	Tungsten	W	184	vi
Lanthanium	La	92·9	iv	Uranium	U	237·6	vi
Lead	Pb	206·9	iv	Vanadium	V	51·3	v
Lithium	Li	7	i	Yttrium	Y	61·7	iii
Magnesium	Mg	24	ii	Zinc	Zn	65·2	ii
Manganese	Mn	54	vi	Zirconium	Zr	89·6	iv
Mercury	Hg	200	ii				

Those marked * are classed as non-metallic elements.

(To be continued.)

Entry Forms for the "Holidays with the Camera" and "Annual Lantern Slide" Competitions are now ready, and will be forwarded on application.

How to Make a Set of Photographic Apparatus.

By H. J.

CHAPTER II.

A DOUBLE-EXTENSION CAMERA.

THE camera which forms the subject of this paper will be found a far superior article to the one described in the first chapter, including as it does every possible movement that is of any practical use, both of front and back. It can also be used with lenses from four inches to nineteen inches

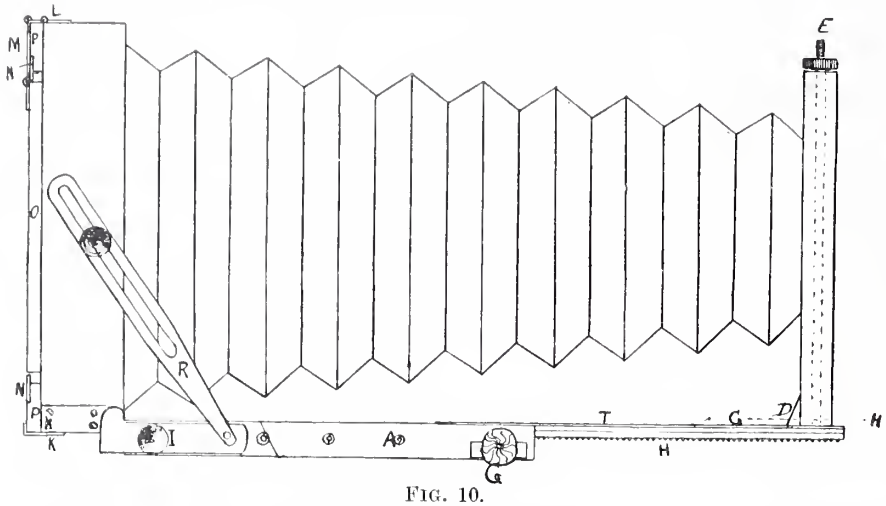


FIG. 10.

focus, without the baseboard cutting off any portion of the view, the back being made to move forward when using short-focus lenses. Of course, the fittings for a camera of this description will be more costly than the other one; but it is folly to "spoil the ship for a pennyworth of tar," so in the following list I have included everything that is needed for a first-class camera. As to procuring the fittings, I can only say the same as in the last (and the same thing applies to the whole of the series of papers),—I will get them at these prices if my readers cannot do so. The following is the list of what is required for a half-plate camera:—

	s.	d.
Racks and pinion for focussing	5	3
Extension rods and nuts (to fix front in position)	1	6
Guide strips for extending front, and strips to form grooves in reversing back for dark slide	2	3
Side hinges and stays, with screws complete ..	5	6
Reversing back clips and clip hinges	1	4
Focussing screen hinges, stops, and turn-button	1	6
Slotted plate and screw for rising front ..	1	0
Screw and nut for baseboard	0	8
Screws to fix above	1	0
Brass strip for front standards, stops, etc. ..	1	0
Total	21	0
Leather bellows (varnished)	6	6
Cloth ,, ...	4	6

A patent turntable can also be supplied at 10s. 6d., which includes royalty, if anyone prefers it to the ordinary tripod head.

The baseboard is the first part to make. This will require to be 8½ inches square, and as it is rather complicated at first sight, I must request you to give particular attention to my instructions, and also examine the drawings carefully, when you will find all difficulties disappear. In the first place prepare a piece 18 inches long, of the section as shown in fig. 15; the size is 1 inch by ¾ inch. Now cut in two equal lengths, and then prepare a piece 7½ inches long by 8½ inches wide; this being smaller in length than width looks curious; but by the *length* I mean the way the grain of the wood runs, and the reason for it having to be this way is, that when it is screwed into the rabbets in the former pieces the grain of one runs opposite to that of the other, and thus adds to the strength. See fig. 11, which is a plan of bottom of baseboard; and fig. 12, which is a section of same on line A B. The middle piece must, before screwing to the side pieces, have two trenches cut along its width, that is *across* the grain, one inch from each edge, and the right width and depth for the rack to slide in easily; this can be tried by the racks themselves, also one other trench crossing these two, one inch from one side; this one must be deep and wide enough for the pinion to lie in easily. See fig. 19, which shows plan of top of main part of baseboard; and fig. 20, which shows section on line E F. These three trenches having been cut, let in the bridge bearing of pinion (fig. 16) into the board, so as it is level with the top, and so that the pinion itself when laid in its trench with the end inserted in the bearing will project about a sixteenth of an inch above the bottom of the other trenches, so as to engage with the teeth of racks (see fig. 20). The middle board can now be screwed and glued into the large rabbet of the side pieces, keeping the screws even and straight so as to look neat, and the extending part can be proceeded with. The grain of this must run crossways again, the same as the other; therefore we require a piece 6¾ inches long and 8½ inches wide. It had better be prepared 9 inches wide, so as to leave a little to clean off; rabbet this on each edge so

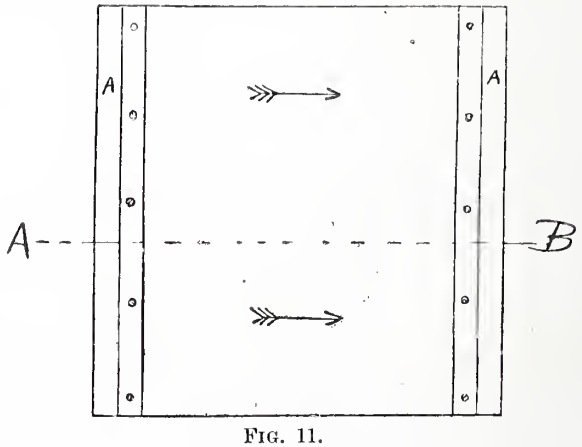


FIG. 11.

that it will slide easily, but without any side play, in the grooves formed in side pieces of baseboard. Then make another rabbet along each edge ⅜ inch on and ⅛ inch deep; see fig. 13 and fig. 17, B. These rabbets are to form grooves for the feet of extension rods, of which I will say more further on. Now run the sliding extension into the baseboard in its place and mark at each end the proper position of racks, underneath of course; and before taking out, plane the ends to the proper size, and then take it out and screw on racks and slide in again to make sure they are in the

W. WATSON & SONS, 313, HIGH HOLBORN, LONDON,

HAVE RECENTLY BEEN AWARDED

At the **AMSTERDAM** PHOTO EXHIBITION, 1891—THE **MEDAL** OF THE SOCIETY

At the **GLASGOW** PHOTO EXHIBITION, 1891—THE **MEDAL** OF THE SOCIETY.

At the **ANTWERP** INTERNATIONAL MICROSCOPIC EXHIBITION, 1891—TWO DIPLOMAS OF **HONOUR**
(Degree above Gold Medals).

At **BUDAPESTH**—THE **GOLD MEDAL** OF THE PHOTOGRAPHIC SOCIETY.

Making 27 awards for the excellence of their Instruments, including Paris Universal Exhibition, 1889 (2 Gold), London, Liverpool Melbourne, etc.

W. WATSON & SONS believe they are the largest Manufacturers of High-class Photographic Instruments in Europe and intending Purchasers can be allowed at any time to inspect their Steam Factories, which are close to their Warehouse, and judge for themselves as to the quality of Material used and the care bestowed on the Manufacture of their Goods, which W. & S. are confident is elsewhere unequalled. *Testimonials as to the efficiency of their Instruments are received almost daily.*

Watson's "Acme" Camera.
Unsurpassed for Outdoor use.

Watson's "Premier" Cameras.
For Professional use, *Indoor or Out.*

Watson's Studio Cameras, Tripods, Enlarging Lanterns, etc.

Sensitized Albumenized Paper.
The Best White or Rose. Per quire, 13s.; half quire, 6s. 6d.; quarter quire, 3s. 6d. Single sheet, 10d., post free.

Watson's "Detective" Hand Camera.

Watson's Rapid Rectilinear Lenses

Watson's Wide Angle and Single Landscape Lenses.

All Cameras and Lenses may now, at an advanced cost, have the Metal parts made in Aluminium.

Sensitized Matt-Surface Paper.
Exceedingly popular. Yields most artistic results. Per quire, 13s half quire, 6s. 6d.; quarter quire, 3s. 6d Single sheet, 10d., post free

AN ILLUSTRATED CATALOGUE OF CAMERAS, LENSES, AND APPARATUS SENT FREE TO ANY ADDRESS ON APPLICATION. Established 1837.

— AND AT MELBOURNE, AUSTRALIA—251, SWANSTON STREET. —

STEAM FACTORIES: 9, 10, 11, 16, and 17, FULWOOD'S RENTS, HOLBORN.

Wratten & Wainwright's
CELEBRATED
"LONDON" PLATES,

"ORDINARY" (15°). For Landscapes, Copying, and Transparencies.

"INSTANTANEOUS" (19°). For Studio and General Work.

"DROP-SHUTTER SPECIAL (24°). For Dull Weather and Hand Cameras. The most rapid Plate made.

Have been manufactured continuously for fifteen years, and have never yet been approached in quality. They are recognised by the most competent authorities as the standard by which all other Plates are judged. These Plates are indispensable for the production of Exhibition Pictures. More High Class Medals have been secured by results on the "London" Plates than all others combined.

Wratten & Wainwright's
SENSITIZED PAPER

HAS THE LARGEST SALE AND HIGHEST REPUTATION, KEEPS WELL, TONES EASILY, AND **DOES NOT BLISTER.**

Post Free—per Quire, 13/6; Half-quire, 7/-; Quarter-quire, 4/-; 3 Sheets, 2/3; Sample Sheet 10d.
Cut Sizes, 1/- per Quire extra.

APPARATUS, CHEMICALS, ETC., OF THE BEST QUALITY ONLY, AT LOWEST MARKET PRICES.
Catalogues and Estimates Free.

WRATTEN & WAINWRIGHT, 38, Great Queen Street, Long Acre, London, W.C.

TELEPHONE No. 2776. TELEGRAPHIC ADDRESS: "WRATTEN, LONDON."

E. G. WOOD, Optician,

74, CHEAPSIDE, & 416, STRAND, LONDON.

WOOD'S BEST QUALITY CAMERA.—Double Extension, Turntable, 4-fold Stand, and Three Double Backs. Best Workmanship throughout, ½-plate, £8 8s.

WOOD'S ENGLISH LENSES for Landscapes, Portraits, or Architecture. Carefully Corrected, Centred, and Mounted.

	Rapid Rectilinear. Focus.	Water. Diaph.	Iris Diaph.	Wide Angle. Focus.	
4½ by 3½	5 in.	£2 15 0	£3 5 0	3 in.	£3 0 0
6½ „ 4¾	7 in.	3 10 0	4 4 0	4 in.	4 0 0
8½ „ 6½	11 in.	5 5 0	6 6 0	5 in.	5 0 0

COMPLETE SETS OF APPARATUS, including Best Camera, English Rapid Rectilinear Lens, 4-fold Stand, Leather Case, and Materials, etc., all of the best quality.

¼-plate, £14 10 0 ½-plate, £18 10 0 1-plate, £28 10 0

"A PHOTOGRAPH, AND HOW TO TAKE IT," WITH CATALOGUE GRATIS. POST FREE, ONE STAMP.

ELLIOTT & SON'S

'TYPICALLY PERFECT.'

ORDINARY

AND

EXTRA RAPID 'BARNET'

PLATES.

OF ALL LEADING DEALERS, OR DIRECT FROM THE WORKS,

BARNET, HERTS.

W. WRAY, MANUFACTURER OF PHOTOGRAPHIC LENSES.

PRICE LIST FREE.

Illustrated Catalogue of Telescopes, Microscopes, etc., for stamp.

NORTH HILL, HIGHGATE, LONDON, N.



PYRO "DEVELOPOIDS.'

A 1s. bottle may be carried in the waistcoat pocket, and will develop six dozen plates. Invaluable when travelling and at all times. Sold everywhere.

Sole Maker—

T. H. POWELL,

116, DENMARK HILL, LONDON, S.E.

Sole Agents—MARION & CO., 22 & 23, Soho Sq., London, W.

Powell's "SHUTTER" Developer, for all rapid exposures, 1s. 6d.

"The Amateur Photographer."

Binding Cases	1/6
Reading „ —	2/
Volumes	7/6

Post free of the Publishers.

right place, and will work easily and without friction. Then take it out once more and bore a hole for pinion through the side piece. Be sure and make the hole large enough to allow a little play to and fro, as it is a great chance if it comes exact the first time; and the plate bearing will keep it right. This bearing must now be let into the side, keeping it at the right distance from end of baseboard, so that the pinion is square across, and also so that it projects the same height in each trench, so as to catch the teeth of both racks; it can be screwed on temporarily

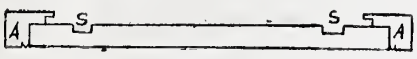


FIG. 12.

and tried before letting in so as to make certain of its being quite correct. If you intend having a turn-table in the baseboard, now is the time to fix it; this can be done with a fret-saw, but to those who possess a lathe, the best way would be to fix the baseboard on face plate and turn the hole out; but for those who have neither lathe nor fret-saw, the way will be to mark it round and bore a series of holes with the centre-bit, touching one another, and finishing with gouge and spokeshave. This way will do very well, as the brass rim of turn-table will cover any slight irregularity,

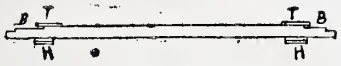


FIG. 13.

though the hole should be cut as true as possible, as it is a very bad plan to do bad work and trust to its being covered up. The baseboard should now be put together; that is, the sliding part put in, and both ends be cleaned off, so that it measures exactly $8\frac{1}{2}$ inches, and a small brass stop let in under the sliding part, so as to catch the front of main part and prevent the pinion from turning it back beyond level, or it would prevent the camera from closing properly.

The front of camera, or rather the frame for the front to slide up and down in, can now be made. For this purpose

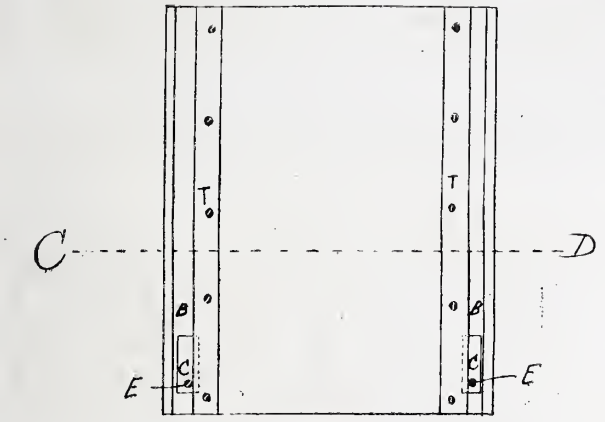


FIG. 14.

prepare two pieces 7 inches long and $\frac{5}{8}$ inch square; these must have a hole down the middle lengthways, as shown in fig. 21, which is a section through the front frame, close to the bottom.

These holes are for the extension rods, and as it is an awkward job to bore them quite true by hand, and it is very unlikely that my readers will be able to do it by machinery, we must find some other way to do it. The best way will be to make the pieces larger, say about $1\frac{1}{4}$ inches square, and bore the holes (which must be $\frac{1}{4}$ inch in diameter) before planing up, then by measuring $\frac{5}{16}$ inch from the centre of holes each way at each end, and continuing the marks along the sides, the pieces can be reduced to the proper size ($\frac{5}{8}$ inch square), with the hole perfectly in the centre. An eighth of an inch groove must then be run down one side of each of these pieces (which it must be understood are the uprights of the front frame) leaving an eighth on one side and three-eighths on the other side of groove; see fig. 21. Now prepare the bottom piece of front frame; this will be $1\frac{1}{4}$ inches by 1 inch, and about 7 inches long.

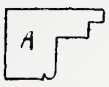


FIG. 15.



FIG. 16.

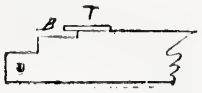


FIG. 17.

When you have prepared this you have to get the exact length between the uprights; to do this, place the feet of extension rods in the grooves made for them in sliding part of baseboard B, figs. 13, 14, and 17 (C, fig. 14, shows the feet in their respective grooves, the round spot representing the rod); now on each rod slide one upright with the grooves facing each other, then measure carefully the exact distance between; now take the bottom piece and cut out at each end a recess so that the uprights will just fit in it and come level with the front, taking care to leave a small tongue on it to fit in each groove, and cutting it the same length from one recess to the other, as the two uprights were apart when in their places. The bottom piece will now be the same shape as the light part of fig. 21. The back edge D can now be bevelled into the uprights so as to show as at D, fig. 10. The three pieces can now be fixed together by screwing through this bevelled part into the uprights, and also by putting a screw through each upright into the bottom piece as shown, taking care that neither screw penetrates into the hole for extension rod. I omitted to say that the uprights should be cut to the right length, 7 inches, before putting together, as it is easier to get them both the same length then than it would after. The top of the frame is held together by a strip of brass screwed on the front of the uprights, as will be seen in the figure of front in the next chapter. The front itself can now be made and fitted; this is formed of a piece of $\frac{1}{4}$ inch mahogany rabbeted to slide up and down in the grooves of uprights; as the back of it will only come level with the back of grooves, it will only be necessary to rabbet it on the front, and it should be level with front of uprights, and a small bead should be run up the joint where it comes to the uprights; as it gives it a better finish. The front should be just square, that is as high as it is wide, and will want a hole in the middle for lens, which can now be made, if you have got the

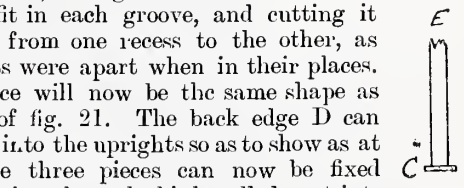


FIG. 18.

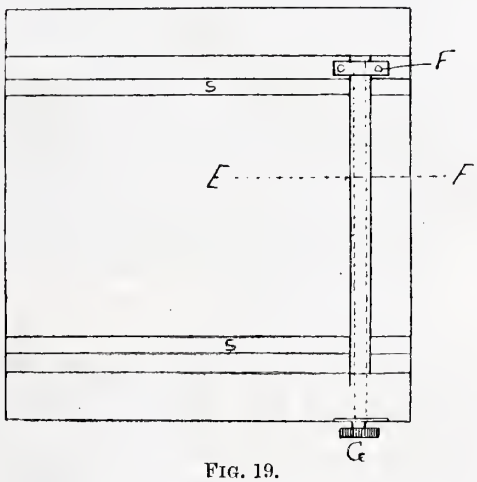


FIG. 19.

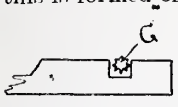


FIG. 20.

lens, but if not leave it till you have, so that it can be made the right size at once, as it will be found more trouble to alter it than it was to make it at first, especially if it is made too large. The camera body is the next part to proceed with, but as I promised in my first paper to describe the way to dovetail it together, I must postpone it for another chapter, in which I shall also show how to fix the brass work and finish the camera. There will be plenty to do in the above until next week, when the same will be continued.



FIG. 21.

EXPLANATION OF FIGURES (CHAP. II.)

Fig. 10. Side elevation of camera.
,, 11. Bottom of baseboard.
,, 12. Section of bottom part of baseboard on line A B (fig. 2).
,, 13. Section of extending part of baseboard on line C D (fig 5).
,, 14. Top of extending part of baseboard.
,, 15. Section of side pieces of baseboard.
,, 16. Bridge-bearing for pinion.
,, 17. Detail of sliding part of baseboard.
,, 18. Bottom end of extension rod.
,, 19. Top side of baseboard with extending part removed.
,, 20. Section of ditto on line E F (fig. 10).
,, 21. Section of front frame on line G H (fig. 1).

EXPLANATION OF REFERENCE LETTERS (CHAPS. II. & III.)

A. Side pieces of baseboard.
B. Rabbets for feet of extension rods to work in.
C. Feet of extension rods.
D. Bottom piece of front frame.
E. Extension rods.
F. Bridge-bearing of pinion.
G. Head of pinion.
H. Racks.
I. Moveable hinges.
K. Clip for reversing back.
L. Hinge clip for do.
M. Focussing screen hinges.
N. Brass strip for dark-slide.
O. Focussing screen.
P. Reversing back.
R. Side stay.
S. Grooves in bottom of baseboard for racks to work in.
T. Brass strips to hold feet of extension rods.
U. Brass top piece to front frame.
V. Rising front.
W. Slotted plate for ditto.

(To be continued.)

Apparatus.

HANNAM'S MOUNTS.

HANNAM AND COMPANY, of 25, Soho Square, W., and Atlas Works, Gainsborough, have forwarded us a large parcel of photographic mounts of all sorts and sizes, which are of first-class quality and reasonable in price.

One special line which strikes us as exceptionally useful to our readers are the boxes and packets of assorted mounts. Those of our readers who use more than one size camera, or are brave enough to trim their prints well, will find these assorted lots of great service. The mounts are of the same quality as sold by the hundred or dozen, and may be obtained either with or without margins. Besides this it gives the worker a chance of picking and choosing and fitting his mount to his paper, as the packets include Oxford lines, the well-known Gainsborough, Atlas, Princess, and other varieties manufactured by this firm.

Messrs. Hannam are also making a special line of cheap Oxford mounts, which we have tested chemically and find to be quite free from "bleach" or any deleterious chemical. For exhibitors some very fine mounts, to hold six or four prints, according to size, are made; and the most striking and artistic mount is the "Whatman," which is a rough-surface mount, with gold bevelled edges and plate-sunk mark, and are specially suitable for platinum or bromide prints.

It will be impossible for us to mention every variety of mount sent us, but the London show-rooms are situate at 25, Soho Square, which is very easy of access, and a catalogue, which contains many requisites besides the mounts, will be sent on application.

THE DEVELOPAN.

The Developan Manufacturing Company, of 130, Charing Cross Road, London, W.C., have introduced a novelty, which consists of a light papier-maché tray and cover. The tray is provided with a pane of deep ruby glass and the lid with a light orange one, thus the whole forms a transparent box which may be used in an ordinary room by day or artificial light. To insert the plate in the Developan it would only be necessary to place both dark slide and the apparatus in a changing bag, or under an opaque cloth. An aperture at the top is provided, into which the developer may be poured in and out.

This little contrivance will be very useful both on tour and to enable an amateur to show in comfort the operation of developing to his friends.

ADAMS' CLUB ALBUM.

Adams and Co., of Aldersgate Street and 26, Charing Cross Road, have sent us a very neat little album, which they have christened "The Club."

It is provided with stout cardboard leaves with apertures cut in it for quarter-plate prints, two on each page, the print being slipped under the front of the cardboard. This entirely obviates the trouble of mounting or trimming prints, which are so often unsuccessfully performed by amateurs, especially with the gelatino-chloride papers.

The album is made in two sizes to hold 96 and 192 quarter-plate prints, and the prices are 5s. and 10s. each respectively. For hand-camera workers and those using quarter-plate cameras in the usual way, this album will be a great boon, and we hope that Messrs. Adams will introduce albums of similar construction in larger sizes, as the advantages of being able to dispense with mounting and to change the prints as desired will be of great convenience.

For postal clubs also the album should be very useful, and as it is handsomely bound in leather with gilt edges, it will form an ornament to any table.

The American League of Amateur Photographers.—Thirty-six delegates representing twenty-one amateur photographers' clubs in various parts of the United States met at the rooms of the Society of Amateur Photographers of New York, 113, West Thirty-eighth Street, and approved of the plan and adopted a constitution and the name of the American League of Amateur Photographers. The league is patterned in many respects after the league of American Wheelmen. It is established to bring about a closer union between camera societies, to promote the science and art of photography, to encourage and advance photography separate from its trade, commercial, or professional relations, and to bring members into closer relationship in acquiring useful information. A division will be organised in each State, and a national council will be held in May 1893, to consist of three delegates and three alternates from each club. State divisions will appoint local officers in each town or centre, who will secure privileges and advantages, and furnish information to a member on presentation of his membership card. Arrangements will be made with hotels to furnish dark-rooms and other conveniences for photographers. The league will publish a journal, and the new organisation will take the place of the American Photographic Conference. It is proposed to secure to members a special discount in purchasing photographic materials. The membership dues will be one dollar yearly, and can be forwarded to the general secretary, T. J. Burton, 113, W. Thirty-eighth Street, New York. Officers of the National Council were elected on July 21st as follows: President—Paul L. V. Thiery, Newark (N. J.) Camera Club; First Vice-President—Dr. George L. Parmele, Camera Club of Hartford, Conn.; Second Vice-President—Frances B. Johnson, Washington (D. C.) Camera Club; Treasurer—W. H. Drew, Lynn (Mass.) Camera Club; Secretary—T. J. Burton, Society of Amateur Photographers of New York. The New York division of the league was organised at the Amateur Society's rooms, and these officers were elected; President—Frank La Manna, Brooklyn Academy of Photography; First Vice-President — Dr. Ely Van Der Walker, Syracuse Camera Club; Second Vice-President—James H. Stebbins-Jr., New York Society of Amateur Photographers; Secretary, Treasurer—H. S. Fowler, Brooklyn Academy of Photography.—*New York Times.*

A Holiday in Norway.

PHOTOGRAPHY AMONG THE FJORDS.

(*Concluded from page* 53.)

IV.—THE HARDANGER FJORD.

AFTER Bergen there was only one more fjord for us to visit, the incomparable Hardanger, gemmed with wooded islands that lay freshly fair in its smooth waters, and running a hundred miles inland through some of the most beautiful scenery in Norway. Not wildly grand and darkly majestic, like those we had visited further north, were the hills of the Hardanger, but broken by happy valleys, where the cattle quietly grazed in fields of fertile green. These lent variety and the charm of contrast to the snow-clad peaks and the slumbering hills, and the human element introduced by the many hamlets nestling in the hollows heightened the romance of the scene. Thus there was an indescribable exhilaration in the journey from Bergen to Odde, first through the outer fringe of islands that protect the country from the sea and then through the sunny fjord itself. Amongst the verdant islands, through the silver-shining reaches where the land receded, under the wooded cliffs where the waters narrowed, past the Mauranger, whence one may sleigh across the famous Folgefond glacier to Odde, on and on we went till the northernmost point at Utne was rounded, and we turned south into the Sör Fjord, and ran down its narrow length to our destination at Odde. The Sör Fjord, though in places like the Hardanger, with many pleasant villages set on its green and shelving shores, yet in general resembles more the stern and majestic beauty of the Fjærlands. Its shores are so rocky and steep in places, as, for instance, between Odde and Tyssedal, that no landing place can be found along them, and the fjord itself is the great highway of communication.



MILL ON THE SANDVENDAL-ODDE.

THROUGH THE TYSSEDAL.

By this highway, immediately after the dropping of the anchor, a small party set out for the grandest and most difficult excursion that can be made from Odde—to the Skjæggedalsfos, or, as it is sometimes called, the Ringedalsfos. At the outset a mishap nearly occurred, for a sudden storm sprang up while we were rowing down the fjord and almost swamped the boat. The danger was rendered all the greater by the violence with which the Tyssa, a mountain stream starting from the fall, pours its troubled waters into the fjord. So impetuously does it rush from its mountain source that it cuts the fjord almost in two, and in rough weather, as on the occasion of our visit, its course may be traced right to the opposite bank. It was necessary to cross this turbulent stream, but it was not till after two futile attempts that we succeeded, and ran into a quiet little cove on the other side. There began a mountain path, to traverse which a clear head and plenty of nerve and muscle are necessary. Rising through a grove of fragrant pine trees, under whose dark tresses, mingled with the dainty plumage of the silver birch and the sober, smooth-stemmed ash, gleamed the wildly flowing waters of the Tyssa below us on our right, the way led into a steep and rocky gorge, up which we climbed by seemingly impossible paths. Ever in our ears sounded the roar of the rushing rapids beneath, at first loud and sullen, but as we climbed becoming fainter, till they were scarce heard above the sighing of the wind-kissed trees. Now up a natural stair of jagged stones, now along a trelliswork of tangled roots, here across a slanting rock, where a single tree laid across the smooth and slippery surface gave a sure foothold; sliding, slipping, scrambling, leaping, for nearly 2,000 feet up the precipitous sides of the gorge, we followed our nimble guide. From this highest point the road descended slightly as the hills curved round to the right, and at last took us off the rocks on to the turf again in the little mountain valley, where the Skjæggedals Hotel is built. This hotel is unique. The only mode of access to it is that which we had made use of down the four miles of fjord from Odde and over the seven miles of climbing inland from the mouth of the Tyssa. Yet the accommodation is excellent, and the dinner earned by the passage of the Tyssedal is sure to be a good one.

THE RINGEDALSVAND AND THE SKJÆGGEDALSFOS.

From the hotel the journey to the fall was resumed by boat, first over a still, deep lake whose clear waters revealed the rocks the rowers skilfully steered us through. This lake we found to be really only a stage in the progress of the Skjæggedalsfos from its mountain home to its rest in the fjord. We had climbed up the torrent which formed the last stage, and reached the lake, which now in its turn led us to another lake, the grand and gloomy Ringedalsvand. Down a magnificent terrace of falls considerably more than a hundred yards wide, broken in places by mighty boulders, around and over which the white foam wildly leapt, the Ringedalsvand plunged into the lesser lake, which, in its turn, fell into the Tyssa. But, fine as this fall was, we dared not stay. Five miles still lay between us and the Skjæggedalsfos, five miles of hard rowing over the

Ringedalsvand, which lay dark and cold and still beneath the encircling cliffs. There was something very weird and awesome about this great silent lake 1,500 feet above the level of the fjord below, and as our little boat, though urged on by four stalwart pairs of arms, crept slowly and laboriously from point to point, in spite of the grandeur of the hills and the beauty of the falls, a feeling of oppression and of gloom stole insensibly upon us. The gaunt, grey mountains all around us, rising in castled pinnacles and rocky turrets far into that still air and cutting off the half of heaven from our view, the eternal snows far up the heights, the sighing murmur of the ever-falling streams, the ceaseless shimmer of the ice-cold waters of the lake, the scant and stunted trees, the scars and seams wrought in the mountains' sides by the downward rush of falls that long had ceased to be—these things impressed us with a sense of melancholy and of sadness. And then, after passing the twin falls of the Tyssestrængene, the floating ice in the lake and the hollow thunder of falling water prepared us for the Skjæggedalsfos. From dizzy heights that no man has ever scaled, into a gloomy chasm cloven out of the blue glacier ice, wreathed and folded in flying mists of spray, boiling, foaming, roaring, and leaping, the majestic volume of water thundered in its might, the grandest cataract in Europe. But it was difficult to pay any lengthy homage to this royal fall, for the blinding spray chilled us through, and the glacier slope on which we stood afforded no very safe footing, and broke off abruptly to plunge into the cavern below. Therefore we soon descended to the lake by the slippery path up which we had climbed. In the wet grass between the foot of the fall and the water's edge grew one little spray of forget-me-not, which was at once seized and borne off as a trophy. As we returned over the lake, the Folgefond Glacier lay full in front of us, and its broad white bosom caught the dying rose of sunset, and, though many miles away, threw a dull flame-coloured light upon the sullen waters of the Ringedalsvand that accorded well with the gloomy grandeur of the scene. By the time the hotel was reached, the dusk of twilight had deepened, so that the return journey over that rough mountain track began to look formidable. Yet, after a rest, we struck up among the sharp and jagged stones into the hills again. It is an oft-disputed question whether it is better to ascend or to descend a hill. The journey down through the Tyssedal settled that question for us—it is better to ascend. But the glory of the dawn as it fell on the pale faces of those great grey rocks, and warmed them with its glowing touch, and chased the dusk of the brief night down through the long ravine, made the way seem all too short. Then at last at our feet lay the fjord which we had left so tossed and driven by the wind, serene and still in the faintly flushing light of dawn, and barred from shore to shore with great bands of silver light over which we rowed till we came to the ship again.

Farewell to Norway.

From Odde there are other excursions to the beautiful Lotefos and Espelandsfos, to the famous Buarbræ, approached somewhat after the fashion of the Skjæggedals, and to the Folgefond Glacier, across which a sleigh-drive can be taken. It was on the Wednesday morning that we left Odde, retraced our way through the Sör Fjord, ran on to Ulvik and into the pretty Graven Fjord, with Eide set like a jewel at its far end, and then turned our faces homeward. But it was long before we got clear of Norway, for all down the beautiful Hardanger lay our course, while the long day through,

> "High on his unpartitioned throne
> The heaven's hot tyrant sat alone,
> And like the fabled king of old
> Was turning all he touched to gold."

It was evening ere we left the last of the encircling islands astern, and then, when the shore was lost to sight behind us, still the snowy foreheads of the hills rose golden with the sun's last ray. Thus we bade farewell to Norway, ringed round with mountains and encircled by the sea, and sped on our way southwards into the darkening night. A quick passage brought us to Newcastle, whose noisy clamour fell strangely on ears accustomed to the eternal silence of the fjords, and then we scattered up and down the length and breadth of the land, and our holiday in Norway became a memory only.

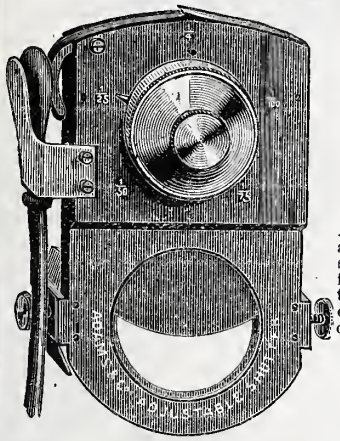


ODDE AND THE SÖR FJORD.

One or two little duties have to be discharged. Every passenger on board the *City of Richmond* owed much of his enjoyment to Captain Bentzon, whose perfect skill had taken the ship in safety over a journey of 2,020 miles, and whose charming courtesy endeared him to all with whom he came in contact. The *fiasco* at the start, thanks to the energy with which Mr. and Mrs. Rimmer faced the situation, was forgotten before the first day closed; and for this Mr. Fennell, of Liverpool, who at a moment's notice undertook the catering arrangements, deserved the acknowledgment he received. On the whole the first cruise of the *City of Richmond* to the land of the fjords must be pronounced a conspicuous success. For those who have no knowledge of Norway it is far better to make acquaintance with the country and the people in this way first, and afterwards to go unhampered to the place or places which make upon them the best impression.

ADAMS & CO.'S 1892 ANNUAL NOW READY.

Circulates over the whole world, contains particulars of dozens of absolute novelties, and is the most complete record of photographic progress ever published. Produced at a cost of Two Shillings per copy. **PRICE SIXPENCE.** Post free, One Shilling. 400 pages and 500 Illustrations.



ADAMS & CO.'S 'ADJUSTABLE' SHUTTER.

NO FITTING REQUIRED.

A ¼-pl. fits any ¼ pl. Lens; a ½ pl. any ½ pl., and so on. Extremely small and light, works at set speed from ½ to 1/100 of a second; also time exposure. Gives the necessary extra exposure to foreground. One of the best and simplest of Shutters, as well as cheapest.

¼ pl. complete ... **17/-**
½ pl. „ ... **21/-**
1/1 pl. „ ... **25/-**

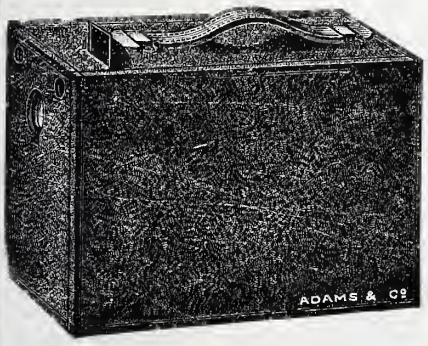
ADAMS & CO.'S 'HAT' Detective Camera.



A perfect Detective Camera of marvellous ingenuity. Takes plates 4¼ and 3¼. Fitted with best rectlinear lens, and shutter working in diaphragm slot. Weighs 2½ ozs. only, as carried.

Price, with 2 slides **63/-** net.

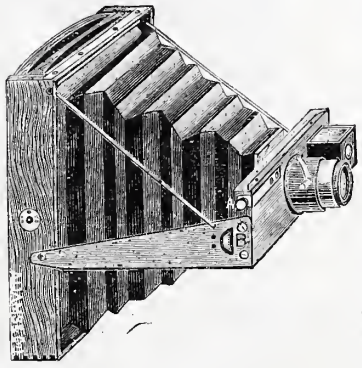
This Camera is most strongly recommended. Fitting done free.



THE 'IDEAL' HAND CAMERA

Has received the highest awards wherever its work has been exhibited; also won the Silver Medal (highest possible award) and Six First Position Medals in the last great 'Photography' Competition. It is the ONLY Automatic Camera that is entirely free from complications and the ONLY one that CANNOT get out of order. Every Camera is GUARANTEED.

No. 1. Fixed Focus, best Rectilinear Lens **£7** net.
No. 2. Made to Focus, with WRAY Lens... **£8 10s.** net.



ADAMS & CO.'S 'VESTA' Pocket Camera

A Folding Hand Camera for 4¼ by 3¼ plates that may be carried in the pocket. Complete with Dark Slide, Lens, Shutter, Focussing Screen, and Reversible Finder. Wray Lens, Pneumatic Shutter, properly timed, and Swing Back for upright pictures. Only 1½ in. thick, and ONLY WEIGHS 1 lb. WITH Double Dark Slide and two Plates. Must be seen to be believed. One of our many great photographic triumphs.

Complete, in case with 3 Double Backs **£7 7s.** net.



THE 'ADAMS' HAND CAMERA

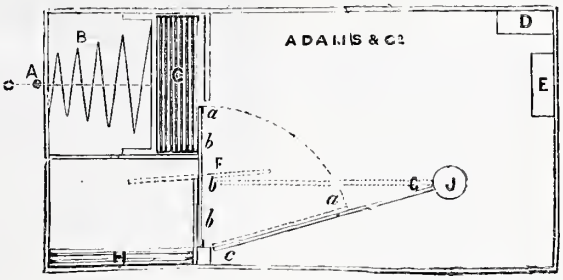
Latest Pattern.

Ross 5 by 4 Rapid Symmetrical Lens, Shutter opening from and closing to centre in diaphragm slot, giving **80 per cent.** of light. Objects focussed on a screen. Reservoirs interchangeable. Takes plates, cut films, or Roll Holder. Used on stand as well as in hand. Is an all-round Camera, perfect even in small details, and is the HIGHEST CLASS and MOST EXQUISITE Camera it is possible to buy.

¼ pl. complete, in case **£15 15s.** net.
5/4 pl. „ „ **£18 18s.** „

ADAMS & CO.'S 'OTTO' Hand Camera.

50s. net.



Automatic changer. Twelve 4¼ by 3¼ Plates. Two Finders. Covered leather. Smallest, neatest, and simplest made. Remarkable value.

Post free with instructions ... **51/6.**

ADAMS & Co 81. ALDERSGATE St. E.C. (FACING THE STATION) & AT 26. CHARING CROSS Rd. W.C (ADJOINING THE CAMERA CLUB) (CHARING CROSS END.) LONDON

Factories—3 and 4, ALDERSGATE BUILDINGS, E.C.

HAND CAMERAS.

NEW HAND CAMERA, BEAUMONT'S PATENT.—To hold 24 Plates for $3\frac{1}{4}$ by $3\frac{1}{4}$ and $4\frac{1}{4}$ by $3\frac{1}{4}$, fitted with good Lens, Focussing Glass, Finders, and Kershaw Shutter.

THE RADIAL.—Strongly made, the interior being made of metal, will stand all climates, carries 12 plates without sheaths or backing. This Camera can be charged with three different rapidities, which can be exposed in any order as desired. A good many Prize Photos have been taken with the Radial. Made in three sizes, $3\frac{1}{4}$ by $3\frac{1}{4}$, **£5 15 0** and **£6 6 0**; $4\frac{1}{4}$ by $3\frac{1}{4}$, from **£7** to **£10 15 0**; $6\frac{1}{2}$ by $4\frac{3}{4}$, **£12** and **£13**.

ALUMINIUM METAL CAMERA.—2 inches square. A neat little instrument; price complete with Shutter, Lens, and 1 Single Back, **45/-**. Extra Backs, **24/-** doz.

PARCEL CAMERA for $\frac{1}{4}$ Plates. A very handy Camera, size being $8\frac{1}{4}$ by 5 by $4\frac{1}{4}$; price with 6 India Rubber Plate Bags, and Camera covered in paper, **£4 10 0.** If covered in leather, **14/-** extra. Extra Bags, **20/-** per doz.

	Centimetres, 9 by 12,	Centimetres, 13 by 18.	Centimetres, 9 by 18
DELTA CAMERA for 12 Plates.	**£3 3 0**	**£5 5 0**	**£5 5 0**
NORMAL SIMPLEX for 12 Plates	**£8 8 0**	**£14 3 0**	**£14 14 0**

BÄDECKER BOOK CAMERA.—Carries 24 Plates, $2\frac{3}{8}$ by $1\frac{3}{4}$. Price **70/-** complete.

STOCK-TAKING.

Clearance Sale of the undermentioned Cameras less 50 per cent.

	Original Price.	Sale Price.
Krugener's Book Camera for 24 Plates, $1\frac{5}{8}$ square	45/-	22/6
,, ,, 30 ,, $3\frac{1}{4}$ by $3\frac{1}{4}$	150/-	75/-
Academy Cameras for 12 Plates, 2 in. square ...	95/-	47/6
,, ,, 12 ,, $3\frac{1}{4}$ in. square ...	120/-	60/-
,, ,, 12 ,, $4\frac{1}{4}$ by $3\frac{1}{4}$...	150/-	75/-
Enjalbert Camera for 8 ,, $\frac{1}{2}$ Plate ...	200/-	100/-
,, ,, 8 ,, 10 by 8 ...	310/-	155/-
Miniature Landscape Camera for Plates $3\frac{1}{4}$ by $2\frac{3}{8}$	21/-	10/6

Full Particulars Free on Application also Illustrated Catalogue.

MARION & CO., 22 & 23, Soho Square, London, W.

Magic Lantern Matters.*

By W. J. Chadwick.

On the present occasion I shall not have much to say about the magic lantern anterior to the introduction of Marey's Sciopticon (from America) by the late W. B. Woodbury. Of course it is quite true that we had lanterns before the sciopticon, and these were of two types, one for burning oil which was nothing more than a toy—and a poor one at that—quite unsuitable for anything more than showing painted slips on screens very little larger than a pocket handkerchief; the other was a big clumsy oxyhydrogen lantern, which was chiefly used for Sunday School meetings, mechanics' institutions and by a few private exhibitors and lecturers. We had occasionally a good deal of talk about using the lantern for educational purposes, but there was very little practical work done in this direction; not many amateur photographers made lantern slides, or paid much attention to them in those days. But there were a few commercial firms who produced lantern slides, and the introduction of the sciopticon must have vastly increased their business, for that beautiful little instrument not only filled up the gap between the already existing instruments; it did more, it was capable of taking the place of both; with its two-wick oil lamp it was possible to exhibit photographs in the drawing-room on from five to six feet and up to seven feet screens without much trouble, and also by the same instrument, using limelight, the largest screens were just as brilliantly illuminated as by the most ponderous lantern ever constructed; indeed, the sciopticon came at the right time, it was just the very thing that was wanted, and it became so popular as to be almost a part of every amateur's paraphernalia.

I believe it to be a fact that Woodbury did take provisional patent protection for the sciopticon lamp in this country, and that during the first year they were placed upon the market over 400 were supplied, but by an oversight, or we may say neglect, for Woodbury was not a business man, the patent was not completed. Other firms took advantage of this, and very soon placed similar lanterns before the public at a slightly reduced price. I am informed that one firm alone supplied over 1,000 of these in the following year. We had not long to wait before several so-called improvements were introduced and patented, but it may be said that nearly all the oil-burning lamps for lantern purposes used to-day are more or less the progeny of the sciopticon.

The sciopticon was originally constructed to burn two one and a half inch wicks, placed edgeways to the condenser, and with the exception of some improvements in the combustion chamber, made by Mr. George Smith, the present proprietor and manufacturer, it remains in its original state. Some of the so-called improved lamps are made to use three, four, and as many as five wicks, and these up to two inches and two and a half inches wide either placed parallel, converging, or diverging, and some again take other forms, the intention being to increase the illuminating power.

Now, if it were necessary, I could give my experiences of many years with nearly all these multiple wick-lamps, and down to the latest patent before the public; but, to be brief, I see no advantage in them for the purpose for which oil lamps are suitable. There undoubtedly is in some an increase in the size of flame; but for lantern purposes a large volume of flame is not required. It is intensity that is necessary, and the intensity must be in the right place, which is the focus of the condenser, and is confined to a very small area, and it can be shown to be a positive disadvantage to have more volume than is required. Then, again, the enormous heat given off by some of these powerful lamps, resembling a roaring furnace, is another very great disadvantage. Added to this is the difficulty to keep the wicks burning evenly, by reason of unequal combustion, for very soon the wicks begin to "fork," one flame gets higher or lower than the rest, the thing begins to smoke, to smell, the light goes bad, and the whole affair has to be readjusted; but with the two-wick lamp there are none of these troubles. It is quite easy to adjust the lamp at the commencement, as not to require the slightest attention for three or four hours.



THE DOM KIRKE, BERGEN. [*A Holiday in Norway*

It has been stated by some amateur lanternists that with So-and-So's or somebodyelse's lamp they have exhibited ten feet pictures, and we know there are some gentlemen who are always cleverer than everybody else, and sometimes these gentlemen are so carried away by their enthusiasm as to believe they have done something big, or, at any rate, to tell us so. I can light my dining-room by a farthing candle, but I do not think you would care to be entertained at dinner by such illumination. Then, we have somebody's lamp compared to limelight. Well, of course, we can compare the light of a candle to the electric arc light; but for *equality* of illumination the comparison is a very poor one.

The limit in size of a picture shown by any oil lamp is, in my opinion, six feet square where photographs are the pictures, but it is possible to select a few photographs of certain subjects that might be tolerated to seven feet, and perhaps more, but after seven or eight feet the blow-through limelight becomes necessary, and this may be used up to ten or even twelve feet, and after that the mixed jet, with oxygen and hydrogen under pressure, is indispensable. Ether may be used in place of hydrogen or coal gas, but I see no advantage in its use in any way.

The oil-lamp, then, as I have stated, is only suitable up to six-feet screens, and the question comes now, is six feet large enough? The answer to that is, it depends where it is to be used and the size of the audience. I have given a good deal of pleasure to private friends at home by even a less picture, but in a private drawing-room or a dining-room it is not always convenient to fix a six-feet screen, and very often when it is con-

* Read before the South Manchester Photographic Society.

venient there is either a fire burning in the room or some abominable reflections, that cause a good deal of trouble by interfering considerably with the results. All these objections are dispensed with by using a transparent screen such as I now introduce. In this little waterproof ease, not unlike an umbrella cover, except that it is a little longer, is a roll of a particular kind of semi-transparent paper three feet eight inches wide. The outer end of it is attached by six drawing pins to a wooden lath five-eighths of an inch square, having suitable fittings for attaching to two light stands, also contained in the waterproof case. The screen, as you will see, can be erected on one end of a dining-room table in three minutes; and, if the table is long enough, the lantern can be placed at the other end. The audience sit in front, and I think you will be surprised to see how beautiful pictures look when projected in this way. The reflections from the house fire do not interfere with the results in the slightest degree. We may even permit a tolerable light in the room, and you may strike a match to light your cigar without seriously impairing the brilliancy of the picture. And, now that all is ready, you see a beautifully illuminated picture three feet six inches square by a sciopticon, and which I maintain is large enough for most private house exhibitions, or even in a small schoolroom, where the audience is not too large.

I am not advocating small screens in preference to large ones, for all depends upon circumstances; but I do prefer a well-lighted small screen to a large one with inferior illumination, and especially so when we can get to the best position from which to view the pictures; and here another matter may be of interest.

The lanternist inquires what is the most suitable size screen for a certain size room? and the audience ask which are the best seats to see the picture from? To say that the screen ought to be in proportion to the size of the room is the general way of putting it, and to sit about the middle of the room is the usual reply to the best position.

Now, it is an established fact, which was recently demonstrated at the Stereoscopic Club, that the most correct position from which to view any photograph is at the angle at which the photograph was taken. Thus, if we make a picture by a twelve-inch lens, and we wish to appreciate size and perspective correctly, we must view the picture at twelve inches from the eye. To examine it at a nearer distance is equal to it being taken by a longer focus lens than twelve inches; and to see it at a greater distance gives the impressions of one taken by a shorter focus lens. Then, if we make quarter-plate negatives by a five-inch lens, to see it correctly we must either use a magnifying glass or a stereoscope, or we may magnify it by the lantern; but the principle is just the same. If we make lantern slides by contact from quarter-plate negatives taken by five-inch lenses, and mask these down to $2\frac{3}{4}$ inches, as is usual, and then project these slides to 6 feet, we have a magnification of 26 diameters; then 26 by 5 (focus of lens) gives 11 feet. If we project the slide to 12 feet, or about 52 diameters, this, multiplied by 5, will show us that, at 22 feet, we should see the pictures at their best; and, from what has now been said, it will be understood how incorrect it is to make lantern slides which are to be shown in series from negatives taken by lenses of different foci, or what comes to the same thing, is making contact slides from quarter-plate negatives and other contact slides from portions of whole-plate and even larger negatives.

At a lantern exhibition, not very long ago, a series of slides of Haddon Hall were shown. The photographer had used a nine-inch focus lens for most of the exterior views, but for all the interiors a five-inch lens was used. I well remember the view from the terrace steps, showing the main front of the building, with the ball room windows; and the next view was the interior of the ball-room. It looked so very large, that no person in the world who did not know the architecture could have imagined a room of such dimensions to be contained in the building we had just seen upon the screen. It was as ridiculous as for an architect to submit unfigured plans of the rooms in a house all drawn to different scales, to fill up the paper, and where the bath-room and the w.c. might be shown the same size as the dining-room, no true idea could be formed from such drawings or such photographs.



A NORWEGIAN BRIDE. [*A Holiday in Norway.*

A similar misuse in lenses was made by a friend of mine who went to Norway last year; he had a half-plate camera, and a seven-inch rapid rectilinear lens. About half the number of his pictures were taken by this lens, and the others by one of the combinations of the lens only, which would be about fourteen inches focus. He said it saved him the trouble of walking or climbing to places where, say, a waterfall would have been too small to fill his plate if taken by the seven-inch combination; the result is, that nearly all the waterfalls in Norway, judging from his pictures, are the same size, and no true appreciation of size or distance is possible from his *series* of pictures.

About the artistic side of the question, I am not here to-night to discuss, though admitting there may be circumstances where, on the same size plate, a seven-inch lens will be better than a five-inch, or *vice versa*, but I repeat, and with emphasis, that the too frequent use of lenses of great disparity in focus for lantern slides is a mistake.

It may be said in conclusion that the focus of the lantern objective has nothing whatever to do with the subject of this communication.

Hackney.—On 2nd inst. the seventy-third meeting was held, Mr. W. P. Dando presiding. Members' work was shown by Messrs. Capel, Nunn, and Reynolds. Mr. Dando showed a series of views taken whilst with the Convention. Question asked. Why does the P. O. P. print sometimes purple and sometimes red, and which gives the best toning? Reply: When fresh it gives the purple tint; with absorption of damp the paper prints the red tone, which is preferable, as it tones to a richer shade.

Societies' Meetings.

Bath.—An excursion took place on 29th ult., to Castle Combe and district. The party, including several ladies, left this city by brake at 11.30 a.m., and proceeding through Box, Corsham, and Pickwick reached Castle Combe about two o'clock. Here they were received by Dr. Sudlow, who refreshed his visitors and drove with them to Grittleton House, some two miles distant, the seat of Sir Algernon Neeld, Bart. The house is of very beautiful proportions and design, with richly ornamental grounds. Having viewed these outside attractions and photographed them, the doctor, armed with the necessary permission, conducted the society through the two spacious picture galleries, filled with very valuable paintings and statuary. Returning again to Castle Combe, and, after a brief rest, the doctor pilotted the society through Mr. Lowndes' beautiful park, where more photographs of the Manor House and adjacent attractions were obtained. At seven o'clock, and somewhat tired, the party returned to the Dower House, Dr. Sudlow's residence, where tea was awaiting them, and two hours later the departure from this delightful valley was taken.

Lewisham.—Ordinary meeting held on 5th inst., Mr. A. H. Miles (Vice-President) in the chair. The chairman gave a very graphic description of the club outing to Rochester on July 23rd, and some proofs of work done on that day were handed round for inspection. Mr. H. L. Davis then gave a short and lucid paper on "Hand-Camera Work," in which he embodied many of the essential qualifications to be looked for in selecting a hand-camera. He exhibited and explained the working of Shew's Eclipse camera. An interesting discussion followed, during which the opinion was expressed that for general work it was best to use a stand with a hand-camera, Adams's Lightning stand being recommended.

North Middlesex.—On 8th inst., the President, Mr. G. W. Marchant, in the chair, 30 members were present, and four new members elected. The Secretary was called upon to open a discussion upon the various methods of obtaining harmonious prints from harsh negatives. During the evening Messrs. Pither, Cherry, Cox, Forbes, Gill, and the Chairman spoke on the subject. The method of harmonising harsh negatives by rehalogenisation and redevelopment was chiefly dealt with, and prints from negatives before and after treatment by this method were shown and a demonstration of the process was given. Prints from negatives taken at the outings to West Drayton and Boxmoor were entered for competition. The vote of merit was accorded to Mr. Wall for West Drayton, and to Mr. Cherry for Boxmoor. A vote of thanks to the Chairman concluded the business. The next meeting will be held on August 22nd, when Mr. Wall will take the chair, and Mr. Debenham will address the Society upon "Carbon Transparencies." Visitors welcome.

Putney.—On the 23rd ult. the members met at Molesey Bridge and proceeded to the lock and weir, where some interesting views were taken. From Molesey the river bank was followed past Hampton Court and Thames Ditton to Surbiton. The day being the occasion of the Kingston regatta there was a rare opportunity for obtaining hand-camera negatives of the river crowded with pleasure craft of all kinds and sizes, not forgetting the City state barge, the *Maria Wood*, so well known to all frequenters of the upper reaches of the river. Before proceeding on their holdiday tours several members tested plates and films of various makes to compare their respective qualties, and much useful and practical information was obtained. Mr. Gorin exposed three of the new "Sandell" plates on the same subject—a clump of trees and bushes surrounding a pond; working in a fair, diffused light, at 5 p.m., with a stop of *f*/22, he gave one plate an exposure of about 1-20th sec., another 1 sec, and the third 20 sec. The negatives were developed with pyro and ammonia, and all three came out extremely well, the snap-shot being only slightly under-exposed, the 1 sec. correctly exposed, and the 20 sec. exposure having none of the usual signs of extreme over-exposure; in fact, with more experience in the manipulation of these plates, and particularly in judging the density when developing, there can be little doubt that the under-exposure could have been greatly modified, and that the over-exposure would have yielded a negative in no way inferior to the apparently correct exposure of 1 sec. Mr. Zachariasen carried out some experiments on the relative merits of plain and isochromatic films, the latter with and without a yellow screen. The subject chosen for the experiment contained yellow houses with red facings, pale blue blinds, blue slates, and light and heavy foliage in the fore and back ground. The results obtained fully confirmed previous experience that for some subjects the iso films have decided advantages, and that this is increased by the use of the yellow screen. The screen was of a light lemon colour, increasing the exposure four times, as proved by the following experiment:—A half-plate film was exposed in camera divided by a stereo division, one half being exposed for five seconds through a lens fitted with the yellow screen, the other half through a plain lens for 1¼ sec.; the uncut film was then developed, the two negatives appeared at the same time, and development proceeded steadily; when taken out, both were equally developed, proving the relative correctness of the two exposures. A gas lantern fitted with a 2 foot burner, and provided with a deep ruby glass 8 in. by 6 in., and a ground-glass placed inside was used during the development; this gave a soft and even illumination, quite ample for judging detail and density. Care was taken to carry on development at some 4 feet from the lantern, approaching it only to watch progress. The edges of the films kept perfectly clear; it is therefore obvious that no fogging took place, and that the objection occasionally raised to the use of isochromatic plates and films that they must be developed in a very feeble light is not a serious inconvenience when the bright light is of the right quality and carefully used. The next outing of the Society will take place at Carshalton on August 6th.

Rochdale.—A capital day's outing was spent by the members on the 6th inst, the place selected being Ingleton. Rochdale was left at 7 o'clock, Ingleton being reached at about 11.30. The first thought that seemed to strike the members of the party was dinner, to which ample justice was done at one of the hotels. After satisfying the inner man, work was at once commenced. After a walk through the village, the party entered this pretty district by what is known as the Storr's Entrance, including Quarry Wood, Twistleton Glen, Snow Falls, Yew Tree Gorge, Black Hole Falls, etc. The return route was by Twistleton Hall, Ravenwray, Thornton Force, Pecca Bridge, Swilla Glen, and Broadwood. After having worked most of the chief points of interest, tracks were made for tea, and after counting up, etc., it was found that 118 exposures had been made. The return journey was commenced at 8 o'clock, Rochdale being reached at a little after 11 o'clock, each member being well pleased with the day's outing, one or two of whom had rather exciting adventures. Mr. Thomas Leach had the leadership of the excursion, and its success owes a great deal to him for his excellent knowledge of the district.

Rotherham.—The monthly meeting took place on the 2nd inst. Dr. Baldwin (President) occupied the chair, and there was a good attendance of members. A petition against proposed restrictions on photographers at the World's Chicago Columbian Exposition was agreed to. The Hon. Secretary exhibited a series of ordinary silver prints made twenty-eight years ago by a local worker; although mounted and no special pains had been taken with regard to them, they had undergone very little (if any) change. Prints on Eastman's gelatino-chloride paper were also shown, and were very favourably criticised. It was agreed that the third excursion of the season should take place on Saturday, August 13th. The place chosen was the Rivelin Valley, near Sheffield. Mr. A. T. Cocking, mining surveyor, and one of the staff of the Firth College, Sheffield, then gave an address on photographic chemistry, confining his attention principally to changes which salts of silver undergo in printing and its after processes. His remarks were illustrated by several experiments. On the 5th inst. the Council of the society made arrangements for the annual members' competition. There will be five classes, viz.: A, six untouched negatives; B, three untouched negatives and prints therefrom (1892 excursion work); C, four negatives and prints—open only to those who have not hitherto gained an award; D, six prints; and E, six lantern slides. At an art and industrial exhibition held in connection with the Rotherham School of Science and Art, on July 28th, 29th, and 30th, and August 1st, several of the society's members sent specimens of work done. Certificates of merit were awarded to Mr. Rackstraw and Mr. Hemmingway.

South London.—Ordinary meeting on 4th inst, the President, Mr. F. W. Edwards, in the chair. The evening was devoted to the explanation and demonstration of various printing processes. Mr. G. W. Moss read a paper explaining his method of preparing and coating of paper by the collodio-chloride printing-out process (which will appear next week), and showed specimens of work on paper of his own preparation. The Fry Manufacturing Company exhibited some pictures printed on their Soltype paper. The manipulation of this paper appeared to be very simple, and the tones of the finished prints were much admired by the members present. The Honorary Secretary suggested as an aid to focussing, the fixing of microscopic cover glasses to the focussing screen with canada balsam, which enabled a focussing eye-piece to be used with great facility. It was announced that the President offered a prize for the best picture produced on the sample Paget plates, a large number of which were distributed at the meeting, the results to be judged on the 5th of September.

Tunbridge Wells.—The ordinary meeting was held on the 4th inst., Mr. Ernest R. Ashton in the chair. The Shuttle hand-camera attracted a good deal of attention, the plate-changing apparatus being universally commended; several members expressing an opinion that it was the best arrangement they had seen. The Hon. Secretary reported he had practically used it, and the working of the Shuttle was eminently satisfactory. The same firm sent down an album with moveable pages, which was considered a great ad-

vance on the ordinary albums, as every page was detachable, and consequently could be removed at pleasure. The vignetting table worked during the evening, and it was agreed that it fulfilled all that was claimed for it, and would perfectly vignette a large number of frames. It was thought to be a great advantage to have the opportunity of viewing these articles at the meeting. The rest of the evening was taken up with the inspection of the "Inland Scenery" prints sent in for competition to the AMATEUR PHOTOGRAPHER. This was a very large collection, and the meeting was much prolonged in consequence, as the prints were subjected to a good deal of criticism, several being much admired. Mr. Cassingham showed the new metal printing frames, and the new print trimmer. The final arrangements were completed for the excursion to Maidstone on the 9th inst.

SOCIETIES' FIXTURES.

Aug. 12.—RICHMOND. — Discussion, "Development of Under-exposed Plates."
" 12.—HOLBORN.—Informal Meeting.
" 13.—WEST SURREY.—Outing to Moulsey.
" 13.—OLDHAM.—Ramble to Knutsford for Arley Hall.
" 13.—HOLBORN.—Official Outing to Chislehurst.
" 13.—SOUTH LONDON. — Excursion to Lambeth Palace and Vicinity.
" 13.—OXFORD.—Walk.
" 13.—RICHMOND.—Excursion to Oxford and Limpfield.
" 13.—CARDIFF.—Ramble to Tredegar Park.
" 13.—NORTHAMPTONSHIRE —Excursion to Whiston.
" 13.—HACKNEY.—Excursion to Theydon Bois.
" 13.—LEYTONSTONE.—Higham's Park.
" 15.—SOUTH LONDON.—"The Optical Lantern, its Construction and Use," G. Banks.
16.—HACKNEY.—Discussion on the Stereoscope.
" 17.—PLYMOUTH.—Excursion to Lidford.
" 18.—NORTHAMPTONSHIRE.—Excursion to Cogenhoe.
" 19.—LEWISHAM.—"Stereoscopic Photography," by Mr. H. L. Henderson.
" 19.—RICHMOND.—Informal meeting.
" 19.—HOLBORN.—Demonstration on Alpha Transparencies, by E. H. Bayston.
" 20.—LEYTONSTONE.—First Ladies' Field Day.
" 20.—PAISLEY.—Excursion.
" 20.—PEOPLE'S PALACE.—Outing to Waltham Cross and Abbey.
" 20.—ELIZABETHAN.—Outing to Welwyn.
" 20.—CARDIFF.—Rambles to Caerphilly Castle.
" 20.—WARRINGTON.—Ramble to Dunham Park.

Directions for the Use of Rodinal.—When exposing plates for Rodinal, a much shorter exposure is required, viz. about half that given for pyro. To develop, use 1 part of Rodinal, and 24 to 30 parts of water. The image even on under-exposed plates will appear rather rapidly, although it becomes more conspicuous only after three or four minutes, thus leaving sufficient time to watch the progress of development. (1) Under-exposed plates you can generally finish developing with a dilution of 1 : 30, without obtaining a negative with too great contrasts. Should there be a considerable under-exposure, add to the solution another 5 to 10 parts of water. Rodinal not being an agent to fog the image, developing may be continued for a very long time. You will then obtain a soft negative, with an image properly and harmoniously worked up which, if required, may be intensified. (2) Should the plate, on developing with a solution of 1 : 30, prove to be over-exposed, remove the developer from the tray and add to it, in order to make it work with greater contrasts, an ample quantity of solution of bromide of potassium and a few drops of undiluted Rodinal. To this end it will be found useful always to hold ready a solution of 1 part of bromide of potassium cryst., 3 parts of water, 3 parts of Rodinal, to be added by drops. (3) Should, in cases of normally-timed exposures, after developing for three or four minutes, the image not be of sufficient strength, it will be due either to the plate being of a kind working particularly smoothly, or to the photograph having been taken in an especially dull light (landscapes, for instance). In either case the employment of a developer working with greater contrasts will be necessary. The same directions as for over-exposures should here be followed. (4) You should always develop somewhat beyond the desired intensity, in order that the negative, after fixing, may still be of sufficient strength. (5) Bromide paper should generally be developed with a solution of 1 part of Rodinal, 100 to 200 parts of water. Some kinds, however, require a stronger solution, viz., 1 part of Rodinal, 40 to 80 parts of water. *Fixing Bath.*—For fixing purposes the ordinary bath of hyposulphite of soda may be employed, although an acidulated bath will always work more reliably. To obtain this, dissolve 1 part of fixing salt (a new preparation lately brought out by the Actien-Gesellschaft fur Anilin-Fabrikation) in 8 parts of water; or dissolve 5 parts of sulphite of sodium (cryst.) in 100 parts of water, acidulate with 1 part of concentrated sulphuric acid, and then add 20 parts of hyposulphite of soda. Rodinal will work well together with hydroquinone, making an excellent "one solution" developer. When time is an object, Rodinal can be conveniently used in connection with other developers by first developing with Rodinal, to obtain details, and then finishing the development with pyro, eikonogen, or hydroquinone to get the required density. The same density, however, can be obtained by simply continuing the development with Rodinal.

Production of Platinum in Russia.—The platinum beds of the Ural mountains, says the *Journal de la Chambre de Commerce de Constantinople*, are the only ones in the world in which this metal is found in grains. Platinum is found in Brazil and in the Cordilleras in the hard serpentine rocks, but never in the form of grains. The platinum beds of the Ural mountains are found in various districts. In the north, at Besserski, in the government of Perm, in the district of Khotourski, and in the State properties of Goroblagodatski, where sixty-six mining concessions have been granted. All the beds of the northern region are situated in the basin of the River Touri, in that of the tributary stream of Taghil, and in other tributaries higher up. On the western declivity of the Ural mountains there is another platinum bed near the river Outka, a tributary of the Tchoussova, and the basins of the higher tributaries of the Outka, near the Ural river. The platinum found in these places is in the form of grains, in sand frequently containing gold. The weight of these grains is from 17 to 21 grammes to every 1,640 kilogrammes of sand. The richness of the platinum beds varies in the same proportions. In some, the thickness of the turf covering the sand does not exceed from 2·16 metres to 2·88 metres, while in others it varies from 10·80 metres to 14 metres, so that it becomes necessary to work underground. The thickness of the platinum sands does not vary much. A noticeable characteristic of it is that they are found in the form of friable grit, and easily washable. The clayey sand is rarely met with. The beds in the northern districts of the Ural mountains are most frequently of little depth, thus allowing the turf to be easily removed and the platinum is quickly reached. The platinum found in this district contains a considerable proportion of gold, whereas that found in the Taghil district contains hardly any. Moreover, the Northern platinum and that of the Taghil district are very different in appearance. The former appears clear and very brilliant, while the latter is of a dull colour and is frequently found mixed with rare metals such as iridium and osmium. The size of the grains is about the same in the two beds.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5787. **Yarmouth and Lowestoft.**—May I again ask any kind reader to tell me of any special pretty little bits for half-plate pictures in or near Yarmouth, Lowestoft, Beccles, or neighbourhood? Any information will be most gratefully received.—TRIX.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

July 15th.—No. 5756.
" 22nd.—Nos. 5763, 5768.
July 29th.—Nos. 5777, 5778.
Aug. 5th.—Nos. 5779, 5780, 5781, 5785, 5786.

ANSWERS.

5760. **Platinotype.**—No licence is required for working this process. The new cold-bath process is as simple as any other printing process, and there is no special apparatus required, merely a dish and some solution of oxalate of potash. It is entirely different to Clark's platinum toning, in which a silver print on plain paper is obtained, and the image then toned with a solution of chloroplatinite of potash. In the platinotype process the platinum is on the paper in conjunction with an iron salt, the latter being reduced by light and the reduction product in turn reducing the platinum salt to the metallic state.—THE EDITOR.

5760. **Platinotype.**—With the platinotype paper you also purchase an implied license to use the same. The new process lately brought out by the Platinotype Company is exceedingly simple and the cost is very little more than the silver printing. There are

no points of similarity between the ordinary platinotype printing and Lyonel Clark's toning processs.—THE SMITH.

5761. **Seplatype.**—There is a paper of this name issued by Sharp and Hitchmough, of Liverpool, which gives very warm brown prints. It is printed out like silver paper, and then after soaking is fixed in a dilute solution of hypo. Most of the commercial photographs of this colour are, however, produced by the carbon process.—THE SMITH.

5761. **Seplatype.**—This is a special printing process. Messrs Sharp and Hitchmough, 101, Dale Street, Liverpool, are the agents, and will give you all information. It is a patent and secret process.—THE EDITOR.

5762. **Hand-Camera.**—5½ in. is the best focus for a hand-camera lens.—EDITOR.

5762. **Hand-Camera.**—The most useful focal lenght for all-round work is 5 to 5½ in. A rapid lens of shorter focus will not cover a quarter-plate so well, and if a longer focus be used, then the depth of focus suffers, unless a small stop he employed.—THE SMITH.

5764. **Sulpho-Cyanide Toning Bath, Ilford Formula.**—Probably some decomposition has taken place, and the hath has become acid. Provided the hath is kept alkaline it will keep at least a month. You do not state whether there is any deposit in the hath, or whether the one print toned was well washed first, and therefore one has to answer somewhat in the dark.—THE EDITOR.

5765. **Ferrotypes.**—Jonathan Fallowfield, 146, Charing Cross Road, sells some dry ferrotype plates with which it is possible to finish a photograph in a few seconds. Full instructions are sent out with each box of plates. There are no glass plates in the market which are specially prepared for this purpose.—THE EDITOR.

5766. **Sat. Sol. Hypo.**—The strength of a saturated solution of hypo or any other salt depends entirely on the temperature of the solution, and therefore, this not being given, it is impossible to give a definite answer. It is far preferable to make a solution of definite strength and dilute down as required. If you weigh out a pound of hypo and put into a saucepan with 16 oz. of water, and heat till dissolved, you can easily measure the quantity of the resulting solution when cool, and add sufficient water to make of some definite strength, such as 1 in 3, or 1 in 4.—THE EDITOR

5766 **Sat. Sol. Hypo.**—At 59 deg. F. 1 oz. of solution contains 1 oz. hypo (Janeway).—THE SMITH.

5767. **Distant Photography.**—Fix the telescope in front of the lens, either with a brass adaptor to screw on to the lens mount, or by a sleeve of light-tight material. The size of the image depends upon the extent to which the camera is extended, and the focussing is effected by adjusting the distance between the eye-piece and the objective of telescope. The field of a telescope is, as a rule, limited to a very narrow angle, and is also very curved; therefore very successful results cannot be expected. The exposure would probably be very short, and is best estimated by judging the image on the screen.—THE EDITOR.

5769. **Studio Builders.**—Davenport and Co., 32, Parkhouse Street, Camberwell, E.C.; Overend and Co., West Green, Tottenham, London, N.; Houghton and Sons, 59, High Holborn, London, W.C.—THE EDITOR.

5772. **Powell's Compressed Gold Baths.**—A good black tone does not depend much upon the toning bath, but upon the quality of the negative. A good, hold, plucky negative printing under green glass and a strong toning bath may sometimes do it. Try—

Phosphate of soda	1 drm.
Sulphocyanide of ammonia	1 ,,
Distilled water	8 oz.

Dissolve and add—

Chloride of gold	4 gr.
Carbonate of soda	20 ,,

Black tones are the most difficult of all to obtain. The fact that your prints turn red in the fixing hath shows you do not carry toning far enough.—THE EDITOR.

5773 **Hand-Camera Shutter.**—Amongst so many shutters it is a difficult task to choose one, but the Thornton-Pickard safety snap-shot shutter is efficient and cheap.—THE EDITOR.

5773. **Hand-Camera Shutter.**—I doubt if you can find one more suitable than the Thornton-Pickard snap-shot shutter with safety blind. The price is about 10s.—THE SMITH.

5774 **Snap Shot.**—Provided the lens covers the plate, your first surmise might be correct, as light leakage would cause fog, not lack of density. If your shutter works outside the lens and is one of the "go and return" variety, that might he responsible for the faulty illumination. Let the sky of your picture fall on that side of your plate, and you will be able to get natural clouds in your negative.—THE SMITH.

5774. **Snap-Shot.**—The want of density may be due to the shutter acting as a diaphragm and cutting off some of the light, or to the material of the dark-slide hinge acting on the film, and thus causing loss of density. If you will send a negative or two up, we shall be pleased to try and help you further.—THE EDITOR.

5775. **Bromide of Copper Intensifier.**—There is no objection so far as we know. The probable reason for its not being recommended is that it is not generally known.—THE EDITOR.

5782. **Llandudno.**—Can recommend Westminster Hotel, Llandudno; Waterloo Hotel, Bettws-y-coed. Have stayed at both places.—TRIX.

5783. **Mountant.**—Soak separately in cold water equal weights of the best glue and gum arabic. The gum will dissolve altogether, and the glue will swell. Then transfer the latter to a glue-pot, and when it is perfectly liquefied, add to it the solution of gum. Stir it thoroughly, strain through muslin, and bottle off for use. The mixture must he warmed before application to the prints.—P. HARRISON.

5783 **Mountant**—

Soft gelatine	200 gr.
Distilled water	6 oz.

Soak gelatine in water for an hour. Dissolve by aid of a water hath, and add, in small quantities at a time, methylated spirit, 2½ oz., stirring constantly; allow it to set. Should any spirit separate out, it should he remelted, and a little more water added. Product should hs a pure, milk-white, firm jelly. A little carholic acid may be added if desired. When required for use, melt hy aid of hot water or a water bath. The print can hs mounted while damp, and it can be shifted about on the mount, or any excess of mountant wiped off, without leaving any trace on the mountant, even the highly enamel ed ones.—INQUISITIVE.

5784. **Mounting Ilford P.O.P.**—

Gelatine	2 oz.
Water	2 ,,
Alcohol	4 ,,
Glycerine	½ ,,

First soak gelatine in the water for six hours, and then dissolve hy a gentle heat. Next add the glycerine, and lastly the alcohol in very small quantities, stirring between each addition. Do not allow the gelatine to get too hot, as it soon loses its setting properties. For this purpose Nelson's amber gelatine will do very well. This print is laid face downwards upon a clean sheet of blotting paper, and the mountant applied with a stiff brush while warm. Too much must not be applied, as it will ooze out from the edges. Carefully raise the print, placing it in correct position on the mount, lay over it a sheet of white paper, and go over this with a handkerchief or piece of soft rag, pressing the print well into contact with the mount. Mounted print should then be laid face upwards to dry, nothing being laid upon it while damp — INQUISITIVE.

5784. **Mounting Ilford P.O.P.**—This may be done by wetting the paper previous to mounting, as I have just mounted some prints that I have had for some weeks. I simply put them to soak in water for about fifteen minutes, and then laid them on a piece of glass, face downwards, and put a piece of blotting paper on the back to take up the surplus water, then pasted and mounted on card, and they did not show the slightest defect—in fact, I could not pick out some that I had just fixed.—J. A. WATSON.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

A. H. ASTON.—The portrait is slightly over-printed, and the print wants trimming down so as to show nothing but the background. The house is also slightly over-printed, or else printed in too strong a light.

S. BRIGGS (Canada).—The work of individual members of your society would certainly be available for any or all of our competitions.

ISO.—The initialling of negatives will not disqualify you. The rule was made to cope with a particular and flagrant case.

TRIX.—(1) Your query is inserted, but why not purchase a copy of our '92 Annual which will give you all the information you want? With regard to your query to us, we will include in our letter. (2) Write to the City Sale and Exchange Rooms, 54, Lime Street, E.C., asking for their terms for hire, which are very reasonable, and include all the best known makers, Try a Taylor, Wray, Swift, or Optimus. (3) Wash your prints well first, and having made up your bath to 8 oz. instead of 16 oz, and allowed it to stand for twelve hours, warm to about 70 deg. F., and then tons. Patchy toning points to contact of the prints with greasy or dirty fingers. (4) Sunk mounts are admissible, and are most artistic, generally adding to the effect.

F. W. WALTER.—The objection to using a caustic alkali for bromide paper is that it too often causes fog, especially round the edges. A carbonate is better.

MISS R. COLLIER.—All prints will be duly acknowledged in our next issue. Yours was received safely.

E. H. KITSON.—There ought not to be any ill effects from your not fixing completely, provided you at once refix in a fresh strong bath.

R. W. SMITH.—Probably you are over-exposing enormously; you do not say whether the plates were black all over or not. Are you sure you pulled the dark slide shutter out? If the plates are blank like clear glass, this is the only explanation possible: if, however, black all over, then probably you are over-exposing. The print you send is from an over-exposed, fogged negative.

H. F. SINGING.—(1) You might try a rather strong acid and alum solution, though you do not give us any idea of what colour the stain is. (2) For the streaky iron stains, try salts of lemon or oxalic acid one part, salt of sorrel two parts, water fifty parts, and soak the negative in it for some hours, and then wash well. (3) The proper way of mounting gelatino-chloride prints if they are squeegeed to ground glass is to paste the back well, then squeegee a sheet of waterproof backing paper on the print, then allow to dry and strip, paste the waterproof paper and squeegee on to mount. If the prints are not squeegeed to glass—they ought to mount in the usual way if you give them a soaking for ten minutes in an alkaline chrome alum hath, which hardens the gelatine, and prevents it from being so tacky.

F. SCARFE.—When toning the first batch of prints you probably introduced some impurities into the toning bath which caused the deposition of the gold as a black dust. Decant the solution from the deposit, add a little *aqua regia* to the deposit, and heat by placing the bottle in a water bath, when the gold should be redissolved, and may he used again by neutralising with a little carbonate of soda, and adding the solution you decanted.

FOG. (1) The alum was evidently contaminated with some iron compounds which caused the blue-green colour. (2) Soak the negatives in water, then immerse in

Ferric chloride	50 gr.
Bromide of potassium	30 ,,
Water	4 oz.

till completely bleached, wash well and then redevelop with ferrous oxalate developer. (3) The white opaqueness looks like the deposition of the silver in a white allotropic condition which cannot be remedied and which is not harmful. Send us up a negative to see, if you like, when we may be able to answer more satisfactorily.

W. HERBERT.—All prints sent into the Monthly Competitions are retained by us.

E. S. AUSTEN.—If you use an alum bath and allow the prints to dry, and then damp them, you will find no difficulty in mounting, if you squeegee the prints to glass, mount on the back a piece of waterproof hacking paper, and then paste over this well. When dry and stripped, damp the mount and squeegee the print down.

WALTON.—Try the following varnish for your films.

Papyroxyline	30 gr.
Camphor	15 ,,
Pure methylated spirit	2 oz.

Dissolve the camphor in the spirit, add the papyroxyline, shake and filter or allow to settle and decant. If the brown colour is on the negative, and your letter is not quite clear on this point, it is probably due to absorption of some iron salt by the damp gelatine.

H. S. W.—(1) Yes, first make a positive by contact printing, and then from this positive make another negative. Both in making your positive and second negative use eikonogen or pyro and ammonia developer, and try for rather thin, soft results, full of detail and without great contrasts, or else you will lose in quality. Probably you would find 10 secs. at 2 ft. distance sufficient with a candle. (2) The fact that the oxalate crystallises out proves that your water has evaporated, and whilst the oxalate may remain in solution at a high temperature, immediately this falls this salt must crystallise out in part; the only thing to do is to keep the total bulk of your solution up to the original quantity by adding more water. (3) We do not return prints sent in to our Monthly Competition, but if we want the negative, which is very rare, we return the same. Entry form sent on.

W. R. P.—(1) Yes, the ruby light will often affect the eyes; and also if you are using ammonia it will affect the eyes. You can very safely replace your red light by a special orange glass which can be had from Benham and Froud, Chandos Street, Charing Cross; they use it in their Perfection lamp. Also if, instead of placing the lamp opposite you, as is so often done, you place it at the side so as to shield the eyes but still throw light on the table, the annoyance will cease. In many cases, too, want of ventilation in the dark-room has a good deal to do with the ill effects (2) The keeping power of the stock solution of eikonogen depends a great deal upon the specific formula used; the cause of the blackening is oxidation of the eikonogen. (3) Dissolve your sulphite in the boiling water, add some acid to make it faintly acid, then add the eikonogen; the milky deposit might be lime, thrown down from the water, or a little eikonogen decomposed, and the acid thrown down. (4) Ordinary tin dishes are hardly safe; any colour enamel, preferably white or black, and Aepinall'e is the best. (5) The colour screen is a necessary adjunct to isochromatic plates if you want to get the full benefit of their colour sensitiveness, and, except in the afternoon when the light is yellow, it should always be used. We can hardly say that its use tends to reduce contrast, as in some instances it may increase contrast, but in others

it lessens it; it is a far too extensive field to enter upon here. We shall shortly commence a series of articles on this subject. (6) The yellow screen must be fixed firmly at right angles to the axis of the lens; it will not do to hold it in front and let it wobble about. Both the Ilford Company and Messrs. Edwards have very ingenious though different devices to fix the screen, nor would it be a difficult matter to devise one. (7) Mounts may be prevented from curling by fixing them between two little slats of wood, which should curl the mount with the print outside, or it may also be obviated to a great extent by mounting on the back of the mount a sheet of white paper rather larger than the print. It certainly would not do to soak the mounts for two or three days before mounting prints on them; the result would be disastrous in the extreme.

J. THOMPSON.—The mountant may certainly be thinned if too ropy or thick. And your idea of sizing and varnishing the backs of the prints is one that we should think would answer; we have not tried it, but it is feasible enough. On the other hand, you might try an alcoholic shellac mountant, as described in Woodbury's "Gelatino-Chloride Printing."

W. BICKFORD.—You are most fearfully underexposing and not developing enough; give at least double the exposure, and develop till the plate is nearly black all over.

Sale and Exchange.

RULES.

CHARGE.—Twelve *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* **2½** *per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* 1s.

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.,** *or a commission of* **2½ per cent.,** *upon the sale price of the apparatus.*

Background.—For sale, background, interior, new, very cheap.—James, 10, Mount Street, Camberwell Gate.

Bicycles, Tricycles, etc.—Juno Safety bicycle, balls throughout including pedals, cost £12 12s., can be seen in London, price £6.—Lugard, Chiswick House, Buxton, Derbyshire.

Cameras, etc.—Whole-plate camera, one double back, bargain, 30s.; approval. Send stamped envelope.—D. Padgham, 67, Paynton Road, Silverhill, Hastings.

Hand-Cameras, etc.—Automatic hand camera, holds 12 lantern size plates, good single lens, time and instantaneous shutter, finder, quite new, 30s.—S. Lane, Alverne Buildings, Penzance.

Lancaster's Omnigraph, 14s.; Watkins' exposure meter, 9s.—St. Lucy's Cottage, Kingsholm, Gloucester.

Underwood's Sphynx hand-camera, euryscopic lens, iris diaphragm, time and instantaneous shutter, focussing apparatus, bellows changer, twelve sheaths, two finders, leather covered and good as new, cost £4 last autumn, will take £3; giving up photography.—Dr. Orr, Newington, Sittingbourne.

Underwood's City hand-camera, quite new, morocco leather, bargain, 26s. 6d.—M. H., c/o Maides, Midhurst.

Lenses, etc.—Voightlander 9 by 7 wide-angle Euryscope, single, cost £2 15s., £1 15s.; head rest, 7s. 6d.; Lerebours portrait lens, £2 2s.; Voightlander rapid wide-angle euryscope, 9 by 7, cost £7 10d, £6, or offers, or exchange.—Cherry, 40, Great James Street, W.C.

Optimus rapid rectilinear 7 by 5, Waterhouse stops, cost 19s. 6d., bargain, 35s; approval.—J. H. Godding, 6, Milton Villas, Newbury.

Sets.—Half-plate 1890 Instantograph, two double backs, waterproof canvas case, two printing frames, developing tray, 4 guineas, or offers?—W., 17, Streatham Hill, S.W.

For sale, half-plate camera similar to Lancaster's Instantograph, raising front, swing back, rack focussing, four double dark slides, and three-fold tripod, in case, 60s.; R.R. lens, Waterhouse stops by Robinson, Oxford Street, 25s.; Furnell's shutter, time and instantaneous 20s.; good condition; reason for disposal.—31, St. Maur Road, Fulham.

1891 Instantograph, quarter-plate, one wood and six Tylar's patent metal slides, lens, folding tripod, instantaneous and roller blind shutters, sling case, accessories, 45s.; pine travelling case for touring, 5s., cost 10s. 6d.; Watkins' exposure meter, 10s.; approval. Want half Instantograph.—Laxton, West End House, Mortlake.

Half-plate Instanto set, good as new, cost 84s., bargain, 67s. 6d.—Merrett, Russell Street, Stroud.

Rayment's patent quarter-plate camera, six double dark slides, Wray's rapid rectilinear lens, 5 by 4, and Grimston's patent shutter, practically equal to new, cost £11, will take £6. With this excellent set I obtained the splendid series of pictures to illustrate my well known lecture on "Life among the Boers and Gold Diggers of South Africa."—Rev. J. H. Riddette, The Manse, Haydock, Lancashire.

Lancaster's half-plate International camera, Silver Ring R.R. lens, iris diaphragms, three Lancaster's double slides and three Tylar's metal, four-fold tripod, solid leather baize-lined case, Optimus finder, focussing cloth, etc., in excellent condition, thoroughly sound, no approval, only wants seeing, cost over 10 guineas, cash £7.—Thomas, "Lanteglos," Glebe Avenue, Enfield.

Lancaster's brass-bound 1891 half-plate Instantograph, double slide, lens, changing box, Thornton-Pickard time and instantaneous shutter, leather case, lock and strap, Tylar's exposure meter, price £5.—W. Kennedy, Hope Cottage, High Street, Ramsgate.

Quarter brass-bound Instantograph, 1891, three double slides, lens, shutter, legs, and sling case, in splendid condition, 50s.—Angear, Polvellan, Yelverton, Devon.

Special bargain! Half plate landscape camera (Underwood's), double back and stand, good condition, 33s.; approval unnecessary.—J. Carroll, Thornley and Dakin, Rawcliffe Street, Blackpool.

Whole-plate camera, nearly new, three double backs, all latest improvements, R.R. and W.A. lenses, by first-class maker, apparatus, etc., complete in case, cost £24, price £14, or offers?—Watson, Clara Cottage, Harvey Road, Leytonstone, Essex.

Stereoscopic Apparatus.—Stereoscopic hand-camera, Miller's Adelphie, Wray's rectilinear lenses, Kershaw's shutter, first-class throughout, £8.—Archer, Victoria Park, Wavertree, Liverpool.

Sundries.—A gentleman taking a caravan tour would like two others to join him.—F. Moore, Hagley, Hereford.

Exchange four years' "Boys' Own Paper" for Demon camera, bags, enlarging apparatus.—Care James E. Lord, Accountant, Rochdale.

Amateur camera builders. Small well-made lathe, good stand and fly-wheel, £3; number chucks and tools included; a genuine bargain; photograph, with particulars, 2 stamps.—61, Gayhurst Road, Hackney.

Tripod.—Whole-plate two-fold tripod, new, perfectly rigid, 8s 6d.—399, Liverpool Road.

WANTED.

Cameras, etc.—Wanted, half-plate Lancaster Instantograph; exchange Talmer hand camera, in perfect condition, cost nearly £5.—Scott, 3, Cotleigh Villas, West Hampstead, N.W.

Hand-camera, etc.—Wanted, hand-camera, Underwood's City or Sphynx preferred.—Holt, Printer, Rawtenstall.

Lantern.—Wanted, good triple or biunial lantern, cheap, or first-class exchange.—James, 25, Brunswick Square, Camberwell.

Sets.—Wanted, half-plate double extension camera, slides, and tripod, cheap.—Norrington, 12, Augusta Gardens, Folkestone.

Tripod.—Wanted, walking-stick stand, table top.—F. Thornton, 15, Bromley Road, Beckenham.

Bargains in Cameras and Sets.—15 by 12 double extension camera, leather bellows, rising and falling front, wide angle movement, fitted three double slides, as new, take £8 8s.; 12 by 10 camera, double extension leather bellows, wide-angle movement, double dark slide, fitted fine rapid rectilinear lens and sliding stand, a grand lot, £9 17s. 6d.; Optimus whole-plate camera, leather bellows, reversing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterhouse stops, Thornton-Pickard shutter, three double dark slides, three-fold stand and case, £11 5s.; whole-plate Underwood instanto, wide-angle movement, leather bellows, double extension, rapid rectilinear lens, iris stops, fine definition, double slide, half-plate carrier and folding stand, as new, take £5 15s.; whole-plate camera by Hare, grand article, leather bellows, double extension, wide-angle movement, double slide, changing box, for 24 plates, also changing slide, Optimus rapid rectilinear lens, Waterhouse stops, brand new three-fold stand and case, take £10 17s. 6d.; half-plate 1892 Instanto graph camera, all latest improvements, Instantograph lens, iris stops, shutter, double slide, folding stand and case, take 72s. 6d., as new; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; quarter-plate Underwood's instanto, finest order, changing box for 12 ¼-plates, good lens, rotating stops, one slide, folding-stand and case, 35s.; 1891 Instantograph camera, lens, shutter, slides, and folding stand, 32s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

Bargains in Hand Cameras.—Swinden and Earp hand-cameras, carries 20 quarter-plates, fitted Taylor and Hobson's best rapid rectilinear lens, roller-blind shutters and case, as new, £6 15s.; half-plate Lancaster's Rover, latest pattern, Lancaster lens and shutter, as new, 70s.; quarter-plate Rover, as above, take 42s.; Houghton's automatic hand-camera, carries 12 quarter-plates, rapid rectilinear lens, two finders, Kershaw's shutter, take £3 15s.; Adams' Ideal hand-camera, carries twelve quarter-plates, finest rapid rectilinear lens, two finders, etc., as new, £5 17s. 6d.; Stienheil hand-camera, 9 by 12 centimetres, rapid rectilinear lens, two finders, shutters, carries twelve plates, bag changing, as new, take £4 10s, cost £10 10s.; Optimus detective camera, by Perken, Son, and Rayment, Optimus rapid rectilinear lens, carries six ¼-plates, covered black leather, take £4 4s.; Optimus magazine hand-camera, carries twenty-three quarter-plates, fitted Euryscope rapid rectilinear lens, instantaneous roller blind shutter, two finders, as new, take £5 15s.; Lancaster's Omnigraph, covered leather, good lens and shutter, take 17s. 6d.; and another, 15s.; Samuel's quarter-plate hand-camera for twelve plates, quite new, rapid rectilinear lens, two finders, 32s. 6d.; All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

Bargains in Lenses.—10 by 8 Lancaster's rectigraph lens, Silver Ring, iris stops, as new, £3 7s. 6d.; whole-plate portrait lens, rack focussing, Waterhouse stops, works *f*/6, take 63s.; Ross 10 by 8 wide-angle rectilinear, rotating, fine definition, with flap shutter, £3 10s.; Ross' whole-plate rapid symmetrical, Waterhouse stops, works *f*/8, £4 12s. 6d.; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; whole-plate Suter No. 3, landscape rotating stops, about 12 in. focus, quite new, 37s. 6d., lowest; half-plate Dallmeyer rapid rectilinear, quite new, iris stops, movable hood, £4 10s.; half Ross' rapid symmetrical lens, as new, movable hood, Waterhouse stops, take £3 17s. 6d.; half-plate rapid rectilinear, by Parker, Holborn, aluminium mounts, as new, take ; Mayfield's 7 by 5 rapid rectilinear, Waterhouse stops, covers well, 32s. 6d.; Wray's landscape, casket lenses, 5 in., 7½ in., and 10 in. focus, iris stops, quite new, £3 17s. 6d.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Rayment, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Cameras! Cameras! Cameras! Lenses! Lenses! Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

GOOD OPPORTUNITY FOR AN AMATEUR desirous of commencing Business; capital required, £400. Business in large provincial town, returns £400; handsome shop and studio; all apparatus and requirements; carried on by a lady at present; good reason for disposal.—Apply, Reflex, office of this paper, 1, Creed Lane, E.C.

RICHARDS' Patent Corners, for mounting photos, prints, scraps, etc., in albums, scrap books, and mounts, clean, convenient, ornamental, self-contained and always handy, ready gummed, price 1s. the box.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 411. Vol. XVI.] FRIDAY, AUGUST 19, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Monday Afternoon "At Home" is discontinued for the present, but will be resumed on Monday the 5th of September.

Our Views.—Amateur Photographer 1892 Prize Slides—The Bedford and District Camera Club Exhibition—Dark-Room at Broadstairs—Notice—An Incident.

Leader.—Notes on Colour.

Letters.—A Trip to Chicago (C. S. Smelt; C. D. Ritchie)—Hunstanton (Wisbechian)—A Double-Acting Plumb Indicator (A. J. Adams).

Articles.—General and Photographic Chemistry (Conrad)—How to Make a Set of Photographic Apparatus (H. J.)—The Theory of Development (H. B. Baker, C. H. Bothamley, and Captain Abney)—Amateur Photography in America (Catherine Weed Barnes)—Table of Plate Speeds—The Collodio-Chloride Printing-out Process (Moss)—One's Own Photograph (Husband).

Holiday Resorts.—Dorking.

Illustrated Supplement.

Societies' Meetings.—Belfast—British Association—Dewsbury—Fairfield Camera Club—Hackney—Harlesden and Willesden—Hove—Liverpool—Nottingham—Richmond—Sheffield—Spen Valley—Stockton—Tyneside Warrington—Wolverhampton—York.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom	Six Months, 5s. 6d.	Twelve Months, 10s. 10d.	
Postal Union	" " 6s. 6d.	" " 13s. 0d.	
Out of Postal Union	" " 7s. 9d.	" " 15s. 8d	

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 39.—"Sea Pieces or River Scenery." Latest day, August 22nd.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, September 16th.)

We again call the attention of the secretaries of photographic societies to the fact that early application is desirable for the 1892 Amateur Photographer Prize Lantern Slides. We hope to be able to complete all arrangements by September 14th, and shall as soon as possible publish the dates and places of exhibition.

The Bedford and District Camera Club purpose holding a Competitive Photographic Exhibition on October 11th, 12th, and 13th, which will be open to all amateurs. A series of awards will be granted, which will be of an honorary character (with two exceptions, as undermentioned), to the successful competitors, and the Council of the above Society will appoint, to act as judges, gentlemen of standing, whose names will be announced at an early date. A series of lantern-slide exhibitions will also be given in the evening. The following are the rules and classes:—

(1) No charge will be made for space. (This applies solely to amateurs' work.) (2) Intending exhibitors must intimate not later than September 20th the nature and extent of their exhibits upon the official form, which may be obtained from the secretary. (3) Pictures must be framed, and each must have an official label properly filled up attached to it. (4) All exhibits must be sent carriage paid, addressed to the secretary of the above Society, to be delivered at 35, High Street, Bedford, not later than October 3rd, 1892. (5) There will be no restriction as to the number of exhibits which may be sent in. (6) Pictures may be sent in and will be gladly accepted for exhibition only and not for competition, but such limitation must be marked on the back of each. (7) A silver and bronze medal will be given respectively for the two best pictures, irrespective of size, in the exhibition, all of which must be the competitor's own *bona fide* work. (8) No picture shall be eligible for competition in any class other than the one for which it is intended. (9) The Council reserve the right to select exhibits, to alter any of the conditions, and to withhold any award for which there is not sufficient competition. (10) The Council undertake to unpack, repack, and return all exhibits, but the return carriage must be paid by exhibitor; and while all due care will be taken of the exhibits, the Council will not be responsible for any loss or damage that may occur.

There will be three honorary awards in each of the undernoted classes:—(1) Landscape, $8\frac{1}{2}$ in. by $6\frac{1}{2}$ in. and above. (2) Group subject (quarter-plate). (3) Portraits, $6\frac{1}{2}$ in. by $4\frac{3}{4}$ in. up to 10 in. by 12 in. (4) Genre pictures. (5) Single figure. Studies not to exceed 15 in. by 12 in. (6) Landscapes, $8\frac{1}{2}$ in. by $6\frac{1}{2}$ in. and under. (7) Pictures which have previously obtained a prize. (8) Lantern slides, in sets of six. (9) Instantaneous pictures, any size. (10) Enlargements, any size. (11) For ladies; any subject and size. (12) Special—For boys and girls who are members of the Bedford Schools; any size or subject. (13) Special—A silver and

bronze medal will be given for the two best pictures in the exhibition. Any further information may be obtained of the Hon. Secretary, W. E. Ison, Hughenden, River Crescent, Bedford.

MR. HOUGHTON, of the Stodart Studios, Broadstairs, has kindly placed his dark-room at the disposal of visitors. The charge is 3d. per diem for changing and 1s. 6d. for developing, with use of all chemicals. Ilford and Barnet dry plates are kept in stock.

Mr. Hamilton of the Wrotham Hotel, Broadstairs, has also a dark-room available, but visitors must provide their own light.

WE wish to draw the attention of our readers to the following announcement:—

In no case will the Proprietors of the AMATEUR PHOTOGRAPHER undertake to buy or sell any goods on commission, nor will they be responsible for the safety of any negatives or prints sent to the Editor of the AMATEUR PHOTOGRAPHER for any purpose whatever, although all reasonable care will be taken of the same.

The Editor claims the right of refusing any print, lantern slide, etc., sent in for competition, without assigning any reason for such refusal.

WE have been much amused whilst away last week at Broadstairs to hear the remarks made by an amateur of unbounded experience and self-conceit. In talking to a friend at the dinner-table of a boarding-house, he held forth at great length on his high-class work, and his friend, who was evidently only just a novice, was considerably awed and astonished. Very soon the conversation turned to books and periodicals, and our friend of such wide experience said, "Oh, I never take in any photographic paper. There is never anything new in them, only the same old twaddle, which I learnt when I first began." Here a quiet question elicited the fact that he had had his camera only eighteen months! We were, unfortunately, struck dumb at the stupendous wisdom of the gentleman who had mastered photography in eighteen months, and could learn nothing new, and as he takes in no papers he will be no wiser than before. Still, it is just as well to be sure of your audience knowing nothing before you talk too big.

NOTES ON COLOUR.

I.—LIGHT.

THE question, "What is Light?" has from time immemorial agitated the minds of philosophers, and various have been the answers given The ancients considered it possible for the eye to send out long delicate feelers, which rendered man cognisant of the object to which the eye was directed. Sir Isaac Newton propounded the theory which assumed light to be an imponderable, subtle substance, consisting of extremely minute particles of matter, and that these minute corpuscles were emitted from luminous bodies at enormous velocity, and, entering the eye, struck the retina, and produced the impression of vision. This theory, however, was found unsatisfactory, and Huyghens proposed the now universally accepted undulatory theory, which assumes that space is filled by a rarified, elastic substance, which is called the luminiferous ether. This ether is supposed to be also very closely surrounding the molecules of all matter.

The particles of luminous bodies are supposed to be in extremely rapid vibration, and these said particles being surrounded by the ether, a series of waves or undulations are set up in the ether, which proceed at an enormous velocity. The shock of these waves upon the retina produces the sensation of vision and gives us the impression of light. From a number of investigations the velocity of light is stated to be 300,574,000 metres per second in a vacuum.

The particles of matter which constitute a luminous body bring in rapid motion, impart this motion to the surrounding ether, forming waves which are somewhat similar to waves formed on the surface of still water by the dropping of a stone, proceed in all directions in straight lines, unless they meet with some obstacle, when their behaviour is influenced by the physical character of this obstacle. Thus the waves of light from some luminous body, such as the sun, proceed in straight lines till they meet an obstacle in the shape of a mirror, when they rebound and then reach the eye, having suffered what is called reflection. All substances reflect light more or less, the degree and character of the reflection being altered by the physical character of the surfaces of the object; thus a highly-polished sheet of silver reflects the light incident upon its surface almost entirely—actually 92 per cent. of the incident light; and this silver plate not only reflects the light, but seems, under certain conditions, to press the light closer together, so as to make sharply-defined masses of light. If the sheet of silver, instead of being highly polished, possesses a matt, dead, or rough surface, the inequalities of the surface scatter the light in all directions. The facts just stated about our two sheets of silver apply more or less to all substances, and therefore the connection between the sheets of silver and natural bodies will explain several facts to which attention will be drawn hereafter.

As all substances reflect more or less of the light incident on their surfaces, so all substances transmit, or allow to pass through, some of the light. Taking two examples, such as a thin sheet of glass and a sheet of gold, in the first case we find that the light is transmitted with almost inappreciable exactness of intensity and tint, and therefore glass is said to be transparent and colourless; but in the second case, if the sheet of gold is of the same thickness as the glass—say, one centimetre, we can detect no light passing through it, therefore gold is said to be opaque; but if the sheet of gold is reduced to a very thin film, by a suitable process of rolling and hammering, what do we find now? that it is no longer opaque, but transmits a characteristic bluish-green light. Between these two extremes, none are strictly and absolutely transparent, none are strictly and absolutely opaque.

The question naturally arises, Why is the light transmitted by a thin leaf of gold bluish-green, and not white, as was the light before transmission? An explanation of this will follow later on. The point to which we are now led is this—the objects by which we are surrounded in nature possess each of them a distinctive colour when illuminated by sunlight, and although sunlight is white, yet objects are coloured. To explain this phenomenon, we have recourse to an experiment first made by Sir Isaac Newton. He allowed a beam of sunlight to enter a darkened room through a small hole in the shutter of the window, and obtained a round image of the sun on a screen of white paper, but by placing in the course of the beam of sunlight a prism, or a piece of colourless glass of particular shape, instead of a round image of the sun he obtained, in a different position, a band of different colours blending gradually one into the other. This band of colours is called the solar spectrum. Examining this spectrum carefully, let us note what we can see.

Commencing at the top it is seen to be a deep crimson, gradually brightening into scarlet, and passing without perceptible limits into orange, the orange shading into

yellow, the yellow into yellowish-green, and the yellowish-green into a decided green; these colours are at once striking and of equal intensity as the red, that is to say they are all visibly bright; from the green we pass into greenish blue, from greenish blue into violet, and then the colours end, these last colours are not nearly so bright visually as the others. The beam of light which has passed through the prism has been refracted, and at the same time has suffered dispersion, that is to say, the beam of which light has been split up by the prism into its constituent rays of coloured light.

A natural sequence of thought from the last experiment is as to whether the colours of our spectrum cannot again be split up in the same way by the application of, or a repetition of the arrangement in our first experiment.

Thus, let us arrange our prism so that we obtain our spectrum, but instead of receiving the spectrum upon a sheet of cardboard, as before, allow it to fall upon a card in which is a small slit, and placing this slit in the position of one of the colours, allow that colour to pass through the aperture in the card and fall upon a second prism. The result will be that the rays of coloured light will again suffer refraction, but not dispersion, and that only light of the colour allowed to pass through the cardboard screen will be received upon the second screen, after passing through the second prism. We thus prove by a simple experiment that the colours of the solar spectrum are simple, homogeneous, or elementary, and not heterogeneous, like sunlight.

Letters to the Editor.

A TRIP TO CHICAGO.

Sir,—In reply to your corrospondent about taking cameras to America, I can tell him from personal experience that he will have to pay a very heavy duty.—Yours faithfully,

Chas. Stanhope Smelt.

Sir,—I have to-day read Mr. Harris' letter which appears in your current number. Although I think it probable that I am only one of a large number of your readers who have been to the United States with their cameras, perhaps as one who has just returned from a tour in the States and Canada, and who can therefore speak from recent personal experience, I may be allowed, for the information of Mr. Harris and any of your readers who are interested in the subject, in a few lines to say what that experience was.

During a short tour in the United States and Canada in 1891-92, my camera was six or seven times through the hands of the Custom House officers, but I never was required to pay one red cent of duty. Once or twice an officer did hem and haw a little about it, but on being civilly—and that I may remark is important—assured that it was not new, and was solely for my own use, no more was said about it. Speaking generally, I found the United States Custom House officer a very reasonable being, but resembling other people in authority in that he doesn't like to be bluffed. Inattention to this is the mistake that travellers are apt to make. Judging from my own experience, I think amatours need have no hesitation in taking their cameras with them when they visit the States; indeed, I consider it probable that any one who does not will regret it afterwards.—I am, etc.,

Charles D. Ritchie.

* * * *

HUNSTANTON.

Sir,—In your issue of August 5th, "Trix" asked a question (No. 5780) about Hunstanton and neighbourhood. I do not know of any dark-room at Hunstanton or Snettisham, but at Lynn he will find one at 60, High Street, kept by T. Smith and Son, who stock all sorts of plates, papers, and chemicals. As to objects of interest, in Hunstanton, St. Edmunds, there are the churches, and some good landscapes may be got in the district. If he takes a walk towards the Convalescont Home he will find that he can get several splendid pictures. But the beach is the paradise of a photographer; studies of boating, fisher folk, and old boats may be had in abundance.

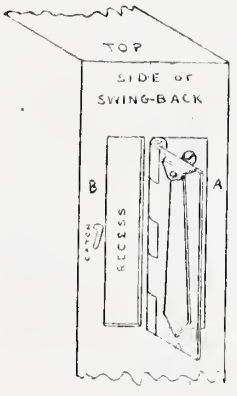
In Old Hunstanton he will find the church and some old cottages, which he must get in the morning. At Snettisham, Heacham, and villages that way, there are only the churches and some old cottages interesting, but if he keeps his eyes open he may get some good harvesting studies during the next three weeks.

When he gets to Lynn he will find the Red Mount (best taken from the back path), the South Gates (best from the outside), the Greyfriars' Tower (back the plate), St. Margaret's Church, and St. Nicholas's Porch (do not miss this, as it is one of the finest in the Eastern counties). There are three minor churches, and good work may be done along the river, especially from West Lynn. When so near, he should continue his journey on to Wisbech, distant fourteen miles. Walking or cycling are the best means of travelling. Each village has objects of interest. West Walton Church should not be missed, and he should enquire for the legends connected therewith. Walsoken Church can be done, and in it is a magnificent font. If he enquires of Mr. Munsen, the sexton, who lives near the church, he will provide him with the key—a silver key will help. As he arrives at Wisbech he will find plenty of work—the churches, Clarkson memorial, Institute tower, the rivor, and no end of other bits. I may state that I havo taken photographs in nearly every churchyard in this district, and have never met with any objection. If admission is wanted to the church, a request to the clergyman will obtain all that is wanted.

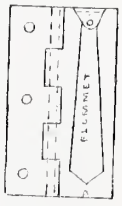
A Wisbechian.

* * * *

A DOUBLE-ACTING PLUMB INDICATOR.



Sir,—I take the liberty of sending sketch of double-acting plumb indicator to be fixed to the side of a camera swing back when there is a reversing back. Being hinged, it can be used either as in sketch, to show when the view is vertical on the focussing screen, or, when folded back to A, to show when the swing back is vertical; and when not in use may be brought over to B so as to protect the plummet, the wood being recessed to clear it.



A. J. Adams.

General and Photographic Chemistry.

By E. C. Conrad, F.C.S.

III.—THE NON-METALLIC ELEMENTS AND THEIR COMPOUNDS.

Abbreviations Used.—Syn., synonym; Oc., occurrence in the natural state; M., manufacture or preparation; P., properties; U., uses; U. P., uses photographically; S. G., specific gravity; Eq., equation; Ex., example; C.C., cubic centimetre; Stp., standard temperature and pressure.

All temperatures are expressed in degrees Centigrade, expressed by ° C.

The above elements will be considered in the following order: H, O, N, Cl, Br, I, F, C, S, P, Si., As.

HYDROGEN, H=1.

Oc.: Small quantities are found free in the exhalations of some volcanoes and hot springs. It is very abundant in a combined state in water, marsh gas, and in

the bodies of plants and animals. M.: (1) By acting on Zn with dilute sulphuric acid hydrogen is obtained, and can be collected over water. Eq.: $Zn + H_2SO_4 = ZnSO_4 + H_2$. Iron, aluminium, chromium, manganese, etc., act in the same way. (2) By passing steam over any of the above metals when red hot hydrogen will be set free. Ex.: $Fe_3 + 4H_2O = Fe_3O_4 + H_8$. (3) By bringing metallic potassium or sodium into contact with water at the ordinary temperatures hydrogen is produced. Eq.: $K_2 + 2H_2O = 2KHO + H_2$. P.: It is a colourless, invisible gas without taste, smell, or any poisonous action. It readily combines with oxygen, burning with a faint but extremely hot blue-coloured flame, producing a temperature of about 3,000° C. In bulk these gases combine with a violent explosion when the mixture is subject to light or heat, such as sunlight, flame, or electric spark. It is only slightly soluble in water, 100 cc. of which dissolve 1·93 cc. of the gas. It is the lightest body known, being 14·47 times lighter than air, and one litre only weighs at stp. 0·0896; if this number is multiplied by the atomic weight of any simple gas, the result will represent the weight of one litre of the gas taken. This number represents the coefficient for weight of any gas, and is called a *Crith*. Gases diffuse at a rapidity that is inversely proportional to the square roots of their densities, therefore hydrogen being the lightest is also the most diffusible body known. It is an essential constituent of all acids and of water. The affinity of hydrogen for oxygen is very great, and their combination always produces water. Most oxides are reduced, when heated in an atmosphere of hydrogen, either to the metallic state or to a lower oxide. Ex.: $Fe_2O_3 + 3H_2 = 3H_2O + Fe_2$, and $Mn_2O_3 + 2H_2 = 2H_2O + MnO$.

Hydrogen also combines by direct chemical action with Cl, Br, I, and S, and indirectly with all the other non-metals and some metals. Some of the compounds produced are combustible, as H_2S, SiH_4, NH_3, PH_3, etc. The compounds resulting are the same as those which would be produced by the combustion of the individual constituents. Ex.: $H_2S + O_3 = H_2O + SO_2$. U.: In combination, by bringing a jet of oxygen into a flame of hydrogen the oxy-hydrogen flame is produced, which is very slightly luminous, but of intense heat (about 2,800° C). If this flame is projected on a piece of lime it raises its temperature to whiteness, producing the so-called limelight. By burning magnesium dust in this flame a good artificial photographic light is produced.

OXYGEN (O = 16).

Weight of a litre at Stp., 1·4298 grammes. Oc.: Oxygen is found free in the atmosphere, of which it constitutes about one-fifth by volume; and in combination with all the elements excepting fluorine, it is calculated to form $\frac{1}{2}$ the weight of the earth and $\frac{8}{9}$ the weight of water. M.: (1) By heating potassium chlorate oxygen gas is given off and can be collected over water. Eq.: $2KClO_3 = 2KCl + O_6$. To decompose the chlorate by itself requires a high temperature, the chlorate first melting and then decomposing. (2) If manganese dioxide (MnO_2) is mixed with the chlorate before heating, the oxygen is given off at a much lower temperature, in fact before the chlorate melts, and this constitutes the ordinary method of preparation; the manganese dioxide undergoes no change. (3) Small quantities of oxygen can be prepared by heating mercuric oxide. Eq.: $2HgO = Hg_2 + O_2$. The oxides of silver, gold, and platinum act in the same way. (4) Manganese dioxide is reduced to a lower oxide at a high temperature, and gives free oxygen. Eq.: $3MnO_2 = Mn_3O_4 + O_2$; some other dioxides act in the same way. Oxygen is now manufactured on a large scale from the air, by several methods, of which the following will serve as an example. If dry air is passed over hot barium oxide (BaO), the dioxide is formed $BaO + O = BaO_2$, and on stopping the air and continuing the heat this dioxide is reduced to the monoxide $BaO_2 = BaO + O$, so that this method forms a theoretical continuous process. P.: Oxygen is a colourless, invisible gas, without taste or smell. It is a very active body combining energetically with most of the elements, especially with hydrogen and carbon, producing the phenomena of combustion by which we obtain light and heat from wood, coals, gas, and other hydrocarbons. The heat of our bodies is due to the same cause, the oxygen of the air being carried by the blood to the seat of muscular action, and there combining with the elements of our food to produce animal warmth. Oxygen combines with most of the metals, either at the ordinary temperatures or on heating to form oxides, but gold, silver, and platinum will not combine directly at any temperature. The oxides can also be obtained by heating the nitrate or carbonate of the metal. In nearly all cases the heat must not exceed dull-redness, or the metal itself will be left. Carbonates of potassium and sodium are not decomposed by heat. With the exceptions already mentioned, most of the oxides are stable at all temperatures. Hydrogen gas reduces heated oxides either to the metallic state or to a lower oxide, but the oxides of barium, strontium, calcium, and magnesium are not reduced. U.: To produce high temperatures and in combination.

NOTE.—Students will find it to their advantage to buy ready-made the compounds they may require, but if they wish to make small quantities for experiment, the following apparatus will be sufficient:—Two glass flasks of about 5 oz. capacity, with corks to fit, perforated with one and two holes; one of each will do, and indiarubber ones are best; two beakers about 3 oz.; two gas cylinders with glass plates for covers; six test tubes 5in. by $\frac{3}{4}$in., and three boiling tubes 6in. by 1$\frac{1}{4}$in; a thistle funnel, and some pieces of glass tubing (say $\frac{1}{4}$lb.) to be bent into required shapes and large enough to fit holes in corks rather tightly; about half a yard of rubber tubing to fit glass ditto, for making joints; and a Bunsen burner or spirit lamp for heating. Unless otherwise stated, use dilute acids and heat gently.

OZONE.—Weight of a litre at stp., 2·15 grm. This substance, which is an allotropic modification of oxygen, is that gas in a condensed condition, three volumes of oxygen becoming two volumes of ozone. Oc.: It occurs in nature in the air, particularly after thunderstorms. M.: It is always produced by the passage of electricity through the air or oxygen gas, and can be prepared by a continuous silent discharge through oxygen. By the action of moist phosphorus on air. P.: Ozone is also produced by combustion, but is decomposed at about 300° C., forming oxygen. It has a peculiar smell, always noticed when an electrical machine is in use. It acts on metallic mercury and moist silver to produce oxides. It is very slightly soluble in water. Ozone is destructive to sensitive surfaces and deteriorates apparatus. It is best to exclude electrical apparatus from dark-rooms or stores of photographic goods. *Test:* A paper moistened with a solution of potassium iodide, and starch is turned blue by the ozone setting free the iodine.

(To be continued.)

An interesting feature of the late rioting and bloodshed at Mr. Carnegie's works was the employment of detective cameras to photograph the rioters unknown to them. The evidence of the plates will probably decide the vexed question as to which party began the struggle and violated the law by entering the grounds of Homestead.

The employes of Messrs. Wood Bros., 73, Lord Street, Liverpool, held their first annual beanfeast on Bank Holiday, August 1st, at Douglas, Isle of Man. The day was all that could be desired for such an event, which was well appreciated by all concerned. After a most pleasant voyage across, they all betook themselves to an hotel, where dinner was served up in good style. Several places of interest in the locality were visited during the day, including Port Soderick, The Smuggler's Cave, etc. A good number of hand-camera shots were indulged in on the Paget Prize plate, the results being such as to substantiate their excellence. After a most enjoyable day's pleasure the party returned home by the midnight boat, greatly benefited by this their first outing.

How to Make a Set of Photographic Apparatus.

By H. J.

Chapter III.

A DOUBLE EXTENSION CAMERA (*Continued*).

The body of camera must be made next, and it can either be made in the same way as that described in the first chapter, or it can be dovetailed; and as the latter is the most workmanlike method, I will give instructions how to do it as well as I can, though it is a rather difficult matter to teach amateur woodworkers who do not understand the various technical terms, etc. However, I will do my best to keep clear of technicalities, so as not to confuse the novice any more than I can possibly help.

The wood of course must be first prepared in the same way as described before, and we shall want a piece about 3 feet long, $1\frac{3}{4}$ inches by $\frac{3}{8}$ inch; when this is planed up straight and true, run an eighth of an inch groove on one side, a quarter of an inch from the edge; and then cut the piece into four lengths, two $8\frac{5}{8}$ inches long and the other two $8\frac{3}{4}$ inches long. They should be cut off square, as if not, it will be more difficult to make a good job of the dovetailing.

Now take the two shortest pieces and place them face to face, that is, with the two grooves in them together as in fig. 22, and holding them exactly level at sides and ends. Drive in a couple of very fine brads, so as to hold them together temporarily; now with the square and a small chisel, make a mark all round seven-sixteenths of an inch from each end; this should leave $7\frac{3}{4}$ inches between the marks, which is the size of the finished camera inside.

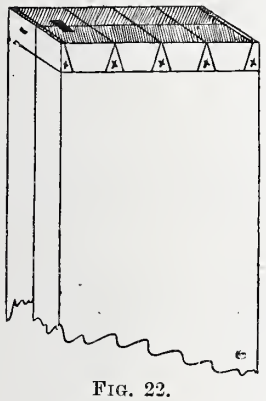


Fig. 22.

The dovetails can then be set out as shown, first marking a half dovetail at each edge, and then dividing the remaining space into equal parts. I have shown three complete dovetails besides the two halves, but though the more there are, the better and stronger the work is, still it is more difficult than it would be if they were fewer and farther between, so I must leave it to each one to use his own judgment according to his skill, whether he uses more or less. After setting out the dovetails on one piece at both ends, the marks should be squared over on the end grain across the two pieces, as a guide for the saw; and they can then be cut, using a fine saw and cutting as true to the marks as possible. It will now be plain what my reason was for fixing the two pieces together, as it is very evident that if each one was set out and cut separately, it would be a great chance if they were exactly alike, which is absolutely necessary for good work, and again it would take double the time to do, than it does if done as I recommend.

The two pieces can now be taken apart and the brads withdrawn, and a line can be made on the inside as they were together, connecting the two marks on edges. Now take one of the other two pieces, and fixing it in an upright position in the vice, or holding it so by any means if you have no vice, then place one of the pieces already cut on it, keeping them both level at the edges, and keeping the mark on the edge of top piece just at the inside of the upright piece (see fig. 23), and taking care that the grooves come together inside; then holding the top piece firmly with the left hand, with the same saw as the dovetails were cut with, mark each dovetail on the end of upright piece; this is easily done by inserting the point of saw in cut and drawing it towards you—the last tooth then makes the required mark.

Each of these two pieces must now be numbered as shown in fig. 23 (1, 1), and then each corner can be done in the same way; the only thing to mind about is, to keep the grooves together inside, and not to mark over again any that have been marked before, or you will be fitting the same piece in two places, and of course at the finish you will have one piece not fitted at all.

Now take the two pieces which have just been marked, and square them all round with the chisel, half an inch from each end, thus leaving $7\frac{3}{4}$ inches between the marks, as in the other two; then square from the end down to the cut marks which you have just made (these can be marked with a pencil, as they are only guide marks for the saw), and then saw down just *outside* the marks on the ends of the two pieces; if you leave about the thickness of the saw between the marks and the saw cut, you will be about right, but do not leave quite so much on the outside pieces (the half dovetails). Now with a very sharp chisel, and cutting half-way through from each side, cut out the smallest pieces (as x x x x in figs. 22 and 23) in the first pieces you cut, and the larger pieces in the last two pieces; these latter will present the appearance shown in fig. 24 after the waste is cut out. The pins, as they are called (p, fig. 24), should now be slightly pointed by taking off the corners; this is to make them enter their respective mortices better; and then the body can be put together, first glueing the pins with some good hot thin glue. If properly done it should require a few smart taps with the hammer to get them in (using a piece of wood to prevent the hammer from spoiling the work), and it should all go together firmly so as not to require any nails, and if it does so it can be put aside to allow the glue to set before cleaning it off. While this is doing, make a strip 3 ft long and $\frac{3}{8}$ inch wide, of the right thickness to fit the groove which now runs round inside of camera body; and when the latter is dry, fit in all round in the grooves, glueing it in.

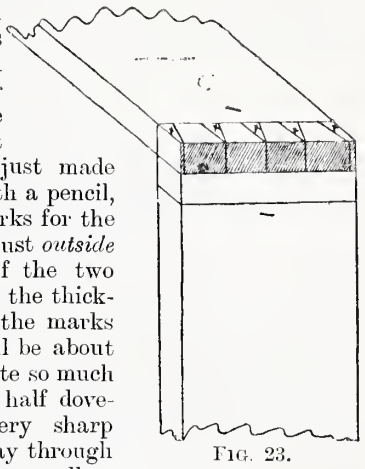


Fig. 23.

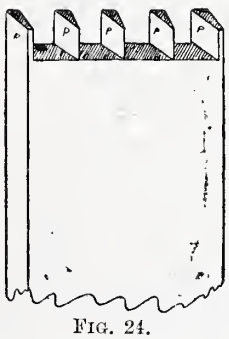


Fig. 24.

The body must now be cleaned off, that is, planed off at the corners where dovetailed; this must be done with a plane set very fine, or you will find some pieces split out. When you have planed it all round, run a small bead round both edges, and this part is finished until it is time to fit the camera up. Now take the sliding front which I described in the last chapter, and after fitting the lens if you have one, make a piece $\frac{1}{4}$ inch thick and the same size as the small end of bellows, which I will suppose to be 4 inches; cut a hole out of the centre of this for lens, getting it plenty large enough; then place this piece in the end of bellows, and fold the leather or cloth, as the case may be, over

the front, fixing it there with a few very small tacks, and then place it centrally on the sliding front, and screw the two pieces together from the inside. The whole arrangement is shown in fig. 27, and though this is not the way it is usually done, I find it much the best way, as well as being very easy to do, and it is quite light-tight and strong, while the bellows can be easily removed at any time if required.

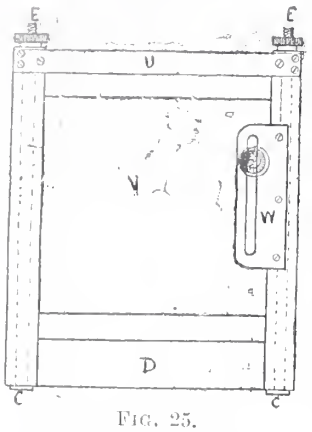
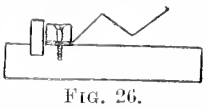
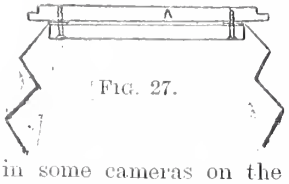


FIG. 25.

The other end of bellows will be fixed in the camera body in the same way as for the other camera described in Chapter I.; only, as will be seen, there was a rabbet there to take reversing back, and here the slips answer the purpose, so that the strips which fasten bellows are out of sight; and the only care to be taken is, to get the bellows parallel, so that when the camera is open the folds will show even with the body. Now take the front, not the sliding part, but the main frame, and screw on the slotted plate to one of the uprights, keeping it halfway between the brass top piece and the wood bottom piece; then place the wood sliding front in the frame, pushing it down close on the cross piece at bottom, and mark on the sliding front where the *bottom* of slot in plate comes; take out front again, and insert a plug nut at the mark, then place in position again, and screw a milled-head screw into the nut through the slot in plate, and it will then be found that it gives a very long rise and fall, the front passing up behind the brass top piece, instead of being stopped by it, as in some cameras on the market. The complete front is shown in fig. 25.


FIG. 26.


FIG. 27.

The camera body can now be hinged to the baseboard; to do this place the two together as when folded (see fig. 28), and place the side hinges on them, without the side stay for the present; this will give the proper place of the parallel piece which fixes to the camera body. When this is found, screw it in its place, then turn the whole over, and fix the one on the opposite side; now place them together again, and mark exactly where the hole comes on the baseboard (this hole is hidden in the figure by the milled head). Take them apart again and insert a plug nut, and this must be inserted at the exact spot; do the other side the same, and then fix each side with a milled-head screw, and try it to see if it opens and closes properly, and if the baseboard is level with the camera all round; if it is not, it can be adjusted by altering the plate on the camera body, or if too bad it can be done by withdrawing the nuts in baseboard and after plugging the holes, inserting again. But if the body and baseboard are both made true and square, there will be no trouble, as it will most likely come right the first time. Having got it right, insert the spare nuts at intervals along each side of baseboard as shown, keeping them the same distance apart on each side. These nuts, I may as well explain here, enable the body to be shifted forward towards the front, by taking out the two milled head screws which hold the hinges to baseboard, and inserting them in the other nuts; this arrangement will be found very useful when using wide-angle lenses, as there is then no fear of half of the picture being cut off by the baseboard, as is often the case where the front is drawn back to get short focus.

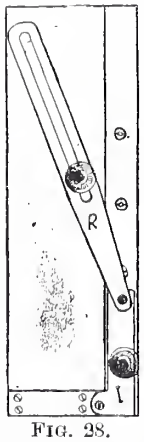


FIG. 28.

The side stays can now be fixed. To do this, first connect the end to the side hinge with the screw, then close the baseboard up to camera, and placing the side stay so that it does not project beyond the back of body, make a mark on the latter at the extreme bottom of slot (nearest the baseboard); and then open the baseboard and insert one of the plug nuts at the mark. Then screw one of the milled-head screws into the nut, through the slot of side stay, when it will be found that the body of camera can be fixed perfectly vertical, whether the baseboard points up or down. This method will be found to give a far larger range of swing back than the arrangement given by me in the first chapter.

The plug nut must be inserted in the opposite side of camera in the same way, the proper place being found by measuring, as they should be both alike.

The reversing back will be made in the same way as the one I described before, with the exception that the clips and clip hinges for holding it in its place will be one top and bottom, instead of at the sides, as I stated then, for reasons which to the makers will be seen; the hinges of course must be at the top and the clips at the bottom. The focussing frame will be also exactly the same in every way, though I must say as I did before, this had better be left until the slides are made, so as to get correct register. The camera can now be blacked inside and polished outside, instructions for which I need not repeat here; but I will caution you not to hurry the polishing, but let it have plenty of time to dry in before finishing, and above all do not be afraid of rubbing it too much, as this is the principal secret of success, to use as small a quantity of polish as possible, and as large a quantity of "elbow grease." If this advice is followed a good lasting shine will be the result, instead of a glitter for a day or two, to go dead after.

The polishing finished, the camera can be mounted. Join the baseboard to the camera (they having been separated for polishing), then take the front frame and insert the two extension rods by taking off the nut and washer; keep the short part of foot towards front of camera, slide the feet of rods in the grooves made for them in baseboard, up to front, and clamp them there by tightening up the top nuts; then slide the camera front into its frame, and screw in the screw in slotted plate. Now try the pinion to see if it will move the sliding part of baseboard forward, which I have no doubt you will find it does; if so, run it back again, and unclamp the front and slide it back inside the camera body. While there screw a small turnbutton on to each upright of front frame, make a small recess in each side of body so that the front will be held in its place. Now fold up baseboard, and screw a small hook and eye on each side at top to hold it there. A brass or leather handle can also be fixed on top for carrying the camera by, unless you intend having a case, when it would not be needed. As will be seen, the camera can be folded without removing lens, if a turntable has been fixed in baseboard; and it would be a very good plan if no turntable is used, to make a hole so that the lens need not be removed in any case.

I hope I have expressed myself sufficiently clear to be understood by all, but if not I shall be happy to answer any inquiries which may be put to me through the medium of the paper or the Editor.

THE IMPERIAL PLATES

SPLENDID QUALITY! EXTREME RAPIDITY!

Mr. GREEN, of Ipswich, writes:

"Your Plates have given a grand result."

POPULAR PRICES.—Sample box of One Dozen ¼, or Half-Dozen ½ Plates, 1s., post free.

THE IMPERIAL BROMIDE OPALS.

Finest and Best. Rapid and Slow.

Same Prices as our Extreme Rapidity Plates. Sample ½ doz. ½ Plates 1/6 post free

Our Thickly Coated Landscape Series

ON SELECTED GLASS.

Same Prices as our Extra Rapid Plates. Sample Dozen ¼ Plates or Half-Dozen ½ Plates 1/3 post free.

THE IMPERIAL DRY PLATE COMPANY, LTD.,

CRICKLEWOOD, LONDON, N.W.

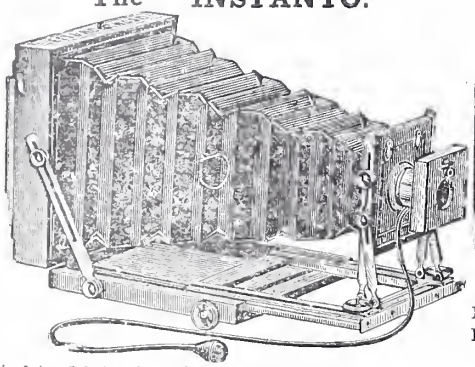
E. & T. UNDERWOOD, 130 & 136, Granville Street, BIRMINGHAM,

MANUFACTURERS OF

Popular Priced Cameras and Sets Complete.

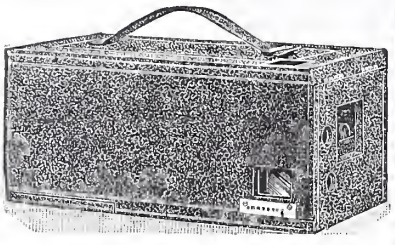
HIGHEST MEDAL AWARD CRYSTAL PALACE EXHIBITION.

The "INSTANTO."



½-plate, **£2 4s. 6d.** ½-plate, **£4 4s.**; 1/1-plate, **£6 6s.**
Complete Set, including Camera & Slide, Shutter & Tripod.

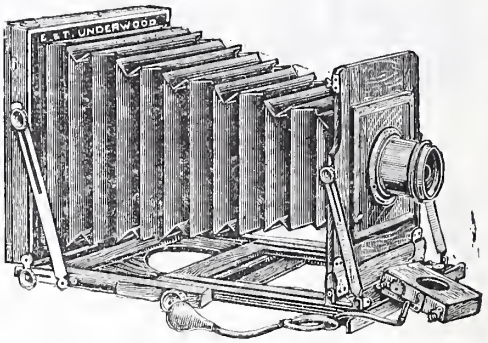
The "SPHYNX" Patent.



Magazine Hand Camera for 1 dozen Sheaths, Roller Blind Shutter, and Rectilinear Lens. Covered in Morocco Leather.

Price £3 15s.

The 1892 "EXHIBITION."



½-plate, **£5 5s.**; 1/1-plate, **£7 5s.** Best Quality.
Complete Set, including Camera & Slide, Shutter & Tripod

HOW OUR GOODS ARE SPOKEN OF.

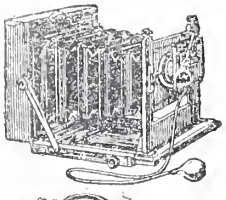
"The Argosy Camera came to hand safely, and I am very pleased with it. I got good results from the very first shot, and it has a nice, neat appearance.—Yours truly, "JOSEPH HENSON, Whitehaven."

"Inclosed please find postals for goods received. My customers are very much pleased with the Hand Camera. All I can say is, your work all round for Stand and Hand Cameras cannot be beaten.

"T. J. RIORDAN, 28, North Main Street, Cork."

Special Catalogues, 3 Stamps.

JOHN PIGGOTT.



"MY CAMERA."

Size 4¼ by 3¼, including Rapid Rectilinear Lens, folding Tripod Stand, and fitted with Pneumatic Shutter and one Double Dark Slide.

	Price complete,	£2	15	0
Size 6½ by 4¼, Do	do.	4	10	0
,, 8½ ,, 6½, Do.	do.	6	15	0
Double Dark Slides, extra, 4¼ by 3¼		0	7	6
,, ,, ,, 6½ ,, 4¼		0	11	6
,, ,, ,, 8½ ,, 6½		0	17	6
Camera and one Double Back only, 4¼ by 3¼		1	12	0
,, ,, ,, 6½ ,, 4¼		2	12	0
,, ,, ,, 8½ ,, 6½		3	15	0

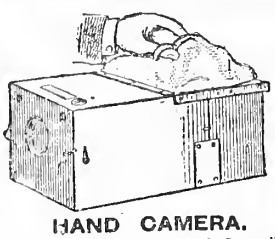
Postage, 3d



¼ plate R. R. Detective Lens, 3/3



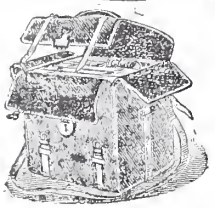
Rebounding Shutters, ¼ pl. 1/-, ½ 2/- Postage 3d.



HAND CAMERA.
For 12 ¼-plates, fitted with Samuel's Changing Bag, **21/**



MAHOGANY DROP SHUTTERS
For Lenses up to 1¼ in. diameter, with Pneumatic attachment, 3/-



CAMERA CASES.

	¼-plate	½-plate	Whole plate
Solid Leather	11/6	12/6	19/9
Canvas Collapsing with sling	2/6	3/3	4/9
Postage	3d.	3d.	4½d.

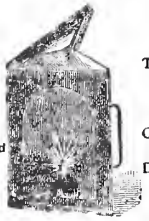


THE WAISTCOAT-POCKET OPERA.
Height 2¾ in., weight 5 oz.
This is a powerful Opera and Marine Glass, with a long range and good definition, and is fitted with a compass at one end, diameter of object lens 1 in., price 15/6.

Steel Frame Spectacles—	per pair.
Convex only	7d.
Better Quality (concave or convex)	1/4
Light Frames	1/10
Pebbles	2/6 and 4/3
Best Finished Frame and Best Pebbles	6/6
Nickelled Curl Side, invisible frames	3/-
Cup or Deyes, any tint	3/10
Tinted, smoke or blue (flat glasses)	2/3

3d. extra for box and postage must be remitted with all orders for Spectacles and Folders.

GOLD FRAME SPECTACLES.
10 carat, glazed with best glasses, per pair 15/6



THE FOLDING TRAVELLER'S LAMP

The most portable Lamp ever made Price 3/- each.

Extra Lights for ditto, 2d. each. Postage 4½d.

Cheap Cardboard Lamps—
(Folding) 6d. each, Postage 3d.
Do. with tin top and bottom—
1/6 each, postage 4½d.



Please send for "My Camera, and How to use it," by JOHN PIGGOTT, List of Photographic Accessories, FREE.

117, CHEAPSIDE & MILK STREET, LONDON

IN LARGE OCTAVO, HANDSOME CLOTH, 18s.

PHOTOGRAPHY:

Its History, Processes, Apparatus, and Materials: comprising Working Details of all the more important Methods.

By A. BROTHERS, F.R.A.S.

GENERAL CONTENTS:—Part I. Historical Sketch; Chemistry of Photography; Optics of Photography; Light in Photography.—Part II. Processes.—Part III. Apparatus.—Part IV. Materials used in Photography.—Part V. Applications of Photography; Practical Hints.

*** **The Volume is fully Illustrated with Twenty-four Full-page Plates by the different processes described, and contains many Tables and Woodcuts in the Text.**

"A most comprehensive volume. . . . The PRACTICAL HINTS are of GREAT VALUE."—*British Journal of Photography.*

"Certainly the FINEST ILLUSTRATED HANDBOOK to photography ever published. . . . SHOULD BE ON THE REFERENCE SHELVES OF EVERY PHOTO SOCIETY."—*Amateur Photographer.*

A FULL PROSPECTUS ON APPLICATION.

London: CHARLES GRIFFIN & CO., Ltd., Exeter Street, Strand.

ILLUSTRATED SUPPLEMENT,

Monthly Competition, No. 38, "Inland Scenery, with or without Figures."

CLASS I.

1. TUCKER, W. H. (Teddington).—"Bagtor Farm, Dartmoor." French R.R., *f*/22; 4 sec., April, very good diffused light, sun behind cloud, 11 a.m.; matt silver, toned with gold and then platinum. This is a half-plate print of extremely pleasing tone and happy composition. It is brilliant and yet soft, and resembles a good sepia platinotype rather than anything else.

2. SMITH, DOUGLAS (Yorkshire).—"Warwick Castle." Wray's R.R., *f*/22; about 2 sec., May, good light, noon; Eastman's gelatino-chloride, sulpho-cyanide and gold. "The view is from a private garden opposite the Castle. The negative is too slightly developed for albumen printing, the thick emulsion being deceptive as to density." A very well chosen point of view, and a very fine 12 by 10 print. The light and shade exceptionally good.



No. 1. "BAGTOR FARM." (SILVER MEDAL.) [*W. H. Tucker.*

3. WILKINSON, S. (Bradford).—"Richmond Castle." Ross' symmetrical, 12 in. focus, *f*/22; 6 sec., June, very dull, 6.30 p.m.; "double printed; the sky cap off and on. When I took this picture the weather was very dull and uncomfortable." A whole-plate print of matt-surface chloride and full of atmosphere and well chosen, with a fine sky effect.

4. TYLEE, C. (London).—"Fishing Station." R.R., *f*/32; 2 sec., May, good light, 3 p.m. "Thought of getting a print of river with fisherman in, but unsuccessful." A whole-plate silver print full of warmth and breeze, an effect partly due to the rushes in the foreground, and also to the clouds.

5. HAYLES, W. (Cambridge).—"In Ditton Meadows." Wray's R.R., *f*/12; about ½ sec., July, bright, light clouds, 3.30 p.m. A whole-plate print, which represents a very happy bit of grouping; had the print been more regular in tone it would probably have come out higher.

6. MCCLEERY, J. (Belfast).—"In Scarva Demesne." Single landscape, *f*/16; 1 sec., May, strong diffused light, noon. A soft, pleasing half-plate matt chloride print, from which just a little foreground could have been spared, and it is questionable whether a better picture could not have been made if the plate had been turned the other way.

7. TUCKER, W. T. (London).—"Llyn Gwynans." June, midday sun.; 12 in., R.R., *f*/16; 1 sec.; Soltype. A very good whole-plate print, but which would have been vastly improved if the cow in the foreground had been out of it altogether.

8. SNOWBALL, G. (Newcastle-on-Tyne).—"On the Common. French, *f*/22; 2 sec., July, diffused light, sun just breaking through clouds, 4.30 p.m. "Taken against the sun, clouds printed in, negative untouched or spotted." A whole-plate matt chloride print which is spoilt by an incongruous figure stuck in the front, and by streaks of dark shade on right hand side.

9. HOLT, HARRY (Liverpool).—"At Gresford." Wray's R.R., *f*/32; 6 sec., April, good light, 4.30. Whole-plate matt chloride print, printed too deep, and the figures are quite unnecessary.

10. TIMMINS, C. A. (Runcorn).—"Lymm Dam." R.R., *f*/16; 6 sec., June, bright light, 3 p.m.; platinotype, hot-bath process. A 9 by 7 print, which is completely spoilt by an ugly yellow stain right in the centre of the picture.

11. SMALLRIDGE, C. (Devon).—"A Devonshire Cottage." Optimus R.R., *f*/24; cap off and on, July, sunshine, noon. A quarter-plate matt chloride print; rather over-printed, and utterly devoid of any brilliancy or sunshine, and not a pleasing tone.

12. CALDWELL, G. (Midlothian).—"The world goes up and the world goes down, And the sunshine follows the rain." Ross' Concentric, 10 in., *f*/22; 1½ sec., June, good light, sun strong, 5.30 p.m. A 9½ by 7 bromide print, toned with uranium to a very bright colour, which is effective if curious. Had this competitor carried out his title still further by printing in suitable clouds, the print would have ranked much higher.

13. MAITLAND, VISCOUNT (Lauder).—"Evening." R.R., *f*/16; ½ sec., March, dull light, 6.30 p.m.; Fry's roughest bromide paper, developed with Rodinal. An 8 by 6 print of very grand effect, and yet which is, unfortunately, utterly false; with such a strong light in the sky and on the water the foreground would have been much lighter.

14. SANDERSON, F. H. (Cambridge).—"The Old Water Mill." Wray's R.R., 6 in., Detective, *f*/16; 4 sec., Easter week this year, soft sunlight, about 4.30 p.m.; albumenised, rubbed down with pumice. A half-plate print of pleasing tone, which is, however, very weak in the right-hand corner.

15. SUTHERLAND, J. W. (Newcastle on-Tyne).—"Old Cockington." Optimus 7 by 5, *f*/32; 1 sec., April, bright light, 11 a.m. A half-plate print on matt chloride; rather over-printed, and too much foreground.

16. SCHINWATER, F. A. (Liverpool).—"A Quiet Avenue." Rectilinear, 5½ in. focus, *f*/44; 30 min., June, very dull light, 4 p.m.; new cold-bath platinotype. A very good little quarter-plate study, but wanting a little in life.

17. WELCH, J. H. (Liverpool).—"In Birkenhead Park." Wray's 8 by 5 R.R., *f*/16; quickest time exposure with Thornton P. shutter, May, good light, 1.30 p.m. A soft, pleasing 7 by 5 print on matt chloride.

CLASS II.

1. PETTY, D. (London).—"Near Hale End." R.R., *f*/22; 1 min., June, very dull, 3.30 p.m. "Taken on a very dull day while the sun was under rather thick clouds." Half-plate matt-chloride print, wanting in definition at the edges, which gives it a curious vignetted appearance.

2. NICHOLLS, A. C. (Cheltenham).—"A Chat in the Lane." Zeiss No. IV. series, *f*/12; 1 sec., June, diffused light, light clouds, 10 a.m. A 9½ by 7½ chloride print, in which the figures are so obviously posed or stuck there as to spoil it.

3. SOLTAN-SYMONS, G. (Plympton).—"Dairy Dell." R.S., Ross, *f*/12; 2 sec., June, bright, 3 p.m. A 12 by 10 silver print, showing very careful technical work, but almost oppressive from its wealth of detail.

4. HAYES, W. A. (Bournemouth).—"Wimborne Minster." Ross' R.S., *f*/16; 1-30th sec., June, sunlight, with almost perfectly clear blue sky, 3.40 p.m. A very fine little quarter-plate print on chloride paper, but the horizon cuts the picture in two rather too strongly.

5. BURY, G. R. (Bournemouth).—"Ceriana" Shew's Eclipse, *f*/10; snap-shot, about 1-16th sec., March, bright sun, 2 p.m. "Clouds from same negative." A brilliant little quarter-plate view in Italy; a little too dark in the left-hand corner, though.

6. LINNELL, L. H. (Stretford).—"Near Alderly Edge." Wide-angle landscape, *f*/30; 2 sec., July, diffused light, 1 p.m. Half-plate silver print showing good technical work.

7. SPILLER, A. L. (London).—"The Mill, Pangbourne." Swift's rapid Paragon, *f*/16; 1½ sec., July, fair, 4.30 p.m. A whole-plate platinotype print, a great deal too black, and wanting clouds.

8. FIELD, A. (Notting Hill).—"The Old Mill House and Salmon Pool." Morley's R.R., 7 by 5, *f*/16; shutter, slow, June, bright at Intervals, 11.30 a.m. Over-printed half-plate on chloride paper.

9. SEVERS, J. (Kendal).—"Grasmere." Beck's R.R., *f*/22; 1-30th sec., June, bright sunlight, 12 noon. "The negative is entirely untouched." A nice little quarter-plate print, unfortunately a little over-printed.

10. FOSTER, P. S. (Halifax). — "A Misty Morning." Ross' 9 by 7 R.S., *f*/32; 3 sec., June, good light, 12 noon; platinotype, new cold bath. "There was a good deal of mist about which prevented me getting a good view of the distance." A very good effect has been obtained, but the telegraph post and fence in the foreground are not needed.

11. BIBBY, W. H. (Blackburn).—"A Sultry Evening." R.R., ⅝ in. diameter; 3 sec. June, moderate light, oppressive atmosphere, 7.30 p.m. Half-plate print, rather wanting in brilliancy, and the composition is rather too central.

12. CLEMENCE, H. (London).—"A Devonshire Road." Wray's rectilinear 8 in., *f*/32; 2 sec., March, sunshine, 4 p.m. A half-plate matt chloride, wanting in brilliancy, and the horse and cart are too central.

13. HARVEY, C. J. (Kidderminster).—"Habberley Valley." Single, *f*/30; about 3 sec., July, bright sunlight, 7.30 a.m. A pleasing little quarter-plate Alpha, print which would be improved by clouds.

14. JUDSON, T. B. (Worcester).—"A Still Pool." Optimus R.R, *f*/32; 2½ sec., April, sunlight, 3 p.m. Half-plate chloride print rather over-printed and unequally toned.

15. BAINBRIDGE, G. B. (Northumberland).—"Evening, Derwentwater." Mawson's 7 by 5 R.R., *f*/22; 3 sec., April, medium light, 6.30 p.m. A very fine evening effect, not too deeply printed, and half-plate matt chloride.

16. MOSS, C. (Sydenham).—"Twilight." R.R. (Watson's), *f*/11; ½ sec., July, fair but cloudy, 5.45 p.m. A soft evening effect, which would be improved by a little less foreground even now.

17. BENTLEY, A. (New Barnet).—"A Quiet Evening." Optimus 7 by 5 R.R, *f*/32; 4 sec., May, strong diffused light, 6.30 p.m. Technically a good half-plate silver print, but spoilt for want of clouds.

18. GEDDIS, A. M. (Dublin).—"Glendalough." R.R. 11 in. focus, *f*/16; 2 sec., August, dull, 3.30 p.m. A whole-plate bromide, which is spoilt by a curious dark shade on the right-hand of print.

19. RAMSDEN, W. (Farnworth).—"Bod Owen." Landscape, *f*/32; 1 sec., June, cloudy, occasional gleams of sunshine, 3.30 p.m. "The clouds in print are on negative, but as they print too dark it was necessary to block them out for about the time it took to print the foreground." A very good half-plate print on chloride paper, but a little too deeply printed.

20. TOWNSHEND, C. W. (N. Wales).—"A Quiet Pool." R.R., *f*/2 5 sec., June, diffused light, 4.30 p.m. A half-plate chloride print which is too dark in tone on the right-hand side.



No. 2.] "WARWICK CASTLE." [*Douglas Smith.*
(BRONZE MEDAL.)

CLASS III.

Ball, F. R. ... Chatham
Bassett, R. ... Tonypandy
Bennett, R. Oxford
Bremner, B. ... S. Norwood
Browning, C. H. Ilfracombe
Bull, P. G. ... Birmingham
Cartwright, R. C. Birmingham
Chaplin, M. ... Sussex
Coventry, H. G. Darlington
Bristowe-Davis, H. J. Bristol
Edmondson, W. B. ... Oldham
Evans, R. M. London
Fulljames, H. J. Wimbledom
Gethen, C. Hereford
Giddings, G. London
Harding, G. ... Stourbridge
Harriman, J. Henley
Hartridge, F. Guernsey
Heath, F. P. Kendal
Heaton-Hinde, C. ... Birkdale
Hodd, R. A. London
Johnson, A. H. ... Hastings
King, C. G. London
Knight, C. T. Penge
Landale, T. D. Kirkcaldy
Layland, H. ... Warrington
Lingard, E. Buxton
Lintott, B. Horsham
MacLeod, R. C. Hayward's Heath
Middleton, W. ... Leeds
Northwood, W. ... Wordsley
Parnall, F. H. Bristol
Partridge, F. Launceston
Peddie, A. Sunderland
Plunkett, J. London
Preedy, D. ... Birmingham
Smith, W. E. ... Cambridge
Tissington, F. London
Trew, H. Plymouth
Tucker, R. D. Bristol
Walley, W. H. London
White, W. E. ... Cambridge

CLASS IV.

Acton, Miss France
Adams, H. F. London
Allen, T. G. F. ... Sheffield
Allender, A. T. ... Liverpool
Annesley, E. ... Cheltenham
Barnett, P. London
Beatie, E. W. ... Wimbledon
Beck, N. G. Sussex
Beech, J. H. ... Stockport
Bird, D. S. Surrey
Booth, W. Heywood
Bradshawe, E. C. Bishopstoke
Brittain, H. E. Sheffield
Burridge, E. ...Watford
Burton, R. ... Liverpool
Cayley, O. A. .. London
Champness, A. J. Surrey
Christie, T Manchester
Clark, J. ... W. Croydon
Cleal, F. ... Kilburn
Collier, Miss Liverpool
Coke S. ... Egham
Crace-Calvert, G. London
Crew, F. A. ... London
Crosse, Samuel, Burslem
Crozier, J. W. ... Hexham
Currie, J. E. ... London
Dawson, H. ... Yorks
Dawson, J., Wimbledon
Deans, R. W., Wolverh't'n
Dean, S. ...Quarmby
Dowdale, A. .Exeter[Mare
Drake, F., Weston-super-
Epgar, W. ... Daventry
Faulkner, H. ...
Fell, W. ... London
Findlay, A. ... Aberdeen
Firth, G. F. ... Wakefield
Fowler, J. P. ... London
Freeman, A. ...Aylesbury
Gaine, R. L., Sunderland
Gape, C. ... Norfolk
Geekie, A., Coupar Angus
Goose, G. J. ... Fulham
Gore-Fanning, R., Chester
Goss, A. ...Cheshire
Grange, W. ...Yorkshire
Grant, C. H. ... Portsmouth
Grace, Mrs. C. ... St. Andrews
Greaves, A. K. ... Bristol
Hannant, H. ... Surrey
Harris, C. J. ... Plymouth
Hartridge, L. ... Guernsey
Heald, H. E. ... Surrey
Hewitt, J. F. ... Burslem
Hughes-Hallett, C. F. London
Hutton, W. K. ... Kilwinning
Jackson, W. J. T. ... Preston
Kedhan, E. .. Waterford
Kiefler, W. E. ... Sunderland
Kingsland, C. R. ... Newmarket
Lawless, R. E. S. ... London
Lechmere, E. H. Worcestershire
Legg, A. D. ...
Lewis, C. E. ... Rochdale
Macgregor, Mrs. ... Clayton West
Macmillan, M. ... Rothesay
Macpherson, S. E. Watford
McCutchan, W. ... Somerset
Martin, H. ... Croydon
Mawson, W. Thirsk

Mead, C. N.	London	Scott, H. S.	Gateshead
Millar, J. C.	Germany	Shaw, H. G.	Herts
Morgan, J. W.	Tunbridge Wells	Simpson, J.	Kingstown
Myers, C.	Newbury	Smith, E.	Nottingham
Niblett, Miss T.	Ledbury	Tapson, E. J.	London
Oddy, E. P.	Leeds	Taylor, J. M.	Wolverhampton
Patterson, T.	Preston	Thompson, J.	Burton-on-Trent
Poole, H. S.	Surrey	Toone, J.	Leinster
Price, M.	London	Vulliamy, E. P.	Glosbury
Putland, E. E.	London	West, R. A.	Cardiff
Robertson, A.	Coupar Angus	Wheatcroft, A.	Exeter
Robertson, M. A.	Bearsden	Wickers, H. A.	London
Rout, S.	Huntingdon	Williams, O. T.	Lee
Salmon, P. R.	Cambridge	Wood, C. H.	London
Sanderson, J.	Blackhill	Young, Mrs.	Pitlochry

Amateur Photography in America.*

By Catherine Weed Barnes.

It will be impossible to enter fully into the question of amateur photographic work in America, and I shall not attempt it, but in considering a subject which necessarily involves comparisons between English and American work and workers it is well, in all fairness, to have some clear idea to start with of how photography is pursued, and the opinion entertained of it in both countries. At present, and this is said advisedly, the English have the advantage at exhibitions of a higher general average of work, though I do not know if it is the case, as with us, that many good pictures never reach the exhibition hall.

The amateurs in England and in Europe generally seem to believe in what they are doing, and consider it worth while to give the work proper time and care, working hard if need be to ensure good results, and this is half the battle. There are too many what might be called snap results with us, and the camera is still looked upon largely as a means to kill time, not worthy of respect for its own sake. We are too anxious to do things quickly, missing often thereby what only comes from patient, long-continued effort. There are instances among our workers of almost infinite patience and determination to show what photography can achieve in art, science, and general education, and such are filled with an enthusiasm which enables its possessor to think only of the end in view, and bend everything to accomplish it, regardless of mental or physical fatigue. The old painters were ignorant of many of our modern canons of art, but they had a worship for the thing itself, too often wanting in our utilitarian age, and the same may be said of photography. Altogether too many workers begin and end with "detective" cameras. Why? Because there is a delusion abroad in the land that they are no trouble, require no brain exertion, are always available, and the user need not look upon his instrument as anything more than a toy. He generally expects, however, that same toy to possess all the photographic virtues of the widely differing branches of work. Beginning with clean, well-lighted portraiture, for instance, through the gradations of soft, atmospheric landscapes and marines, brilliant snap-shots and carefully managed interiors, it is expected all these may be made in the fraction of a second, and, of course, with a single view lens and cheap camera. I once received a letter, not at all an unusual one in my editorial correspondence, wherein the writer took several pages to explain what he wanted a lens to do, each requirement contradicting some other, and asked me to recommend a cheap one. My answer was that no such lens had yet been invented. The American worker, especially in small towns, is very often unable to purchase more than one lens, and yet is anxious to cover the whole photographic field. In such cases I always discourage hand-cameras, as, under the best of circumstances, their results cannot fairly compete with tripod work, not merely because the latter is better in itself, but after taking the necessary trouble of setting up such a camera one is apt to take more pains with the picture. Until one realises all the possibilities of time exposures he does not begin to appreciate photography at its true value. A very encouraging sign of progress with us is the increasing number of organisations devoted to camera work. Hardly a week passes that a new one is not started; and their reports, as sent to our sanctum, show a constantly widening horizon of comprehension regarding the different fields of photographic usefulness. Physicians, painters, scientists of all kinds are utilising the help photography can give them, and are realising also, aside from that, the great and almost mysterious fascination it can exert, independently, on its own special account. A celebrated painter told me recently that he occasionally used an ordinary snap camera, not daring to attempt any of the actual work or he should neglect his regular painting. I cannot but feel that to do camera work well, through all its countless ramifications—and what is worth doing at all is worth doing well—one must get rid of, and put behind him once for all, the idea that its limitations are as narrow as the illiberal prejudices of the past have settled upon. It is far harder to live down a prejudice than a principle, and that is just the task that lies before photography.



No. 3.] "RICHMOND CASTLE." S. Wilkinson.
(CERTIFICATE.)

Experience, however limited, has taught me that when a certain effect is gained in photographic work which at all departs from an ordinary photograph, if one attempts to help others by telling how it was done, his effort is looked upon as if he took his auditors behind the scenes at a theatre, and showed them how certain theatrical effects are produced. Probably the same thing is true this side of the Atlantic. A camerist should, above all things, never apologise for anything which will improve his results, because negative or print has been, as the unregenerate term it, "doctored." If a painter refuses to recognise the existence of an obnoxious element which would spoil his picture, and simply leaves it out, why cannot the photographer use the only means at his command and obliterate the object, whether on negative or print? Why should one be considered genius and the other a trick? The American public, as yet, has not been able to realise that photography has risen far beyond the high tide mark of a generation ago, indeed that it is still rising. They are, as a rule, more anxious for something new than for steady progress in the work, but attendance at recent exhibitions has proved to me that photography is winning a high place for itself, if its followers will insist on not lowering its flag to the level of a trade, but keep it where it belongs, among the arts and sciences which are elevating the general education of the world.

One great cause for the success of European workers at our exhibitions is that we do not give enough consideration to the choice of a subject. We have not the wealth of historic scenes which the old world furnishes, and landscapes, *per se*, pall on one's attention in large numbers, but we are doing something, I am proud to say, to preserve a record of the historic landmarks we own, before the so-called march of improvement destroys them, to say nothing of also keeping a record of passing events, which afford an important field for camera workers. One of the societies with which I am connected has an historical section, whose members are detailed, when any specially important event occurs, to photograph it from different standpoints, thus obtaining a large and varied collection of prints in a comparatively brief time. About a thousand negatives were thus

* Read at the Photographic Convention.

obtained at the centennial celebration of Washington's inauguration as President, which will eventually be of great value. This society's badge entitles the holder to entrance within the police line at fires, parades, etc., and to work in the city parks. Both the large New York societies also give their members special privileges. This idea as to historical work is spreading among our societies with excellent results. The Chicago workers ought to take up seriously the matter of photographing at the exposition, and a general protest is likely to be made against what appears to be the somewhat arbitrary ruling of the authorities. Permission should not be indiscriminately given, but under restrictions.

I have not been able to procure statistics as to the number of clubs in our country, but have visited many of the leading ones from New York to California, finding that, as in the case of the Boston Club, with its fine studio and meeting-room, each has some special advantage, but none offer better working facilities than the New York and Philadelphia Societies. The New York Camera Club talks of a special club-house, with separate studios, dark-rooms, etc. A desire is spreading among the clubs for more practical instruction than is given in papers or discussions, and nowhere is this better shown than in some of the smaller clubs. The idea, so general here, of camera trips during the summer is also gaining in favour with us. Women are admitted to membership in the greater number of our clubs, and in some of those who still hold out in the good old way their work is hung at exhibitions, their lantern slides shown on the screen, and I have spoken before several clubs which do not as yet admit women members, agreeing, perhaps, with a gentleman friend of mine in one such club, that a photographic society should be considered merely as a sort of masculine boudoir. Women workers are increasing rapidly among us, and it is only a question of time when they will be generally recognised as mentally fitted to improve the educational opportunities afforded by a club. Working by one's self encourages a narrow prejudiced manner of judging one's methods and results, and women as well as men need to have their rough edges taken off by the sharp attrition of severe criticism and discussion. We have in America what we call smoking concerts, which women, even if active members, do not attend, and it is only occasionally that a pipe or cigar is seen in the ordinary meetings, never at general entertainments. In the dark-rooms the stall system is largely used as being more private, but the printing and slide work is done in a large room. Quite a number of our leading workers have their own developing rooms, and even portrait studios. In my own case, after making a portrait exposure and developing the negative, I take it to a professional friend of mine, who retouches when necessary, and then, unless in special instances, the sitter orders from and pays him for what prints are desired, the negative, of course, being held by me. I have not time to make so many prints, and sitters would not realise the extra labour involved, besides valuing the pictures more if obliged to pay something for them.

In landscape work the English have the advantage, rather than disadvantage, in their unduly blamed climate, far better atmospheric effects being gained than in our clearer air, but they, as a rule, use heavier cameras than Americans. We rarely use an imported one a great while before beginning to make improvements in it, and, first of all, making it lighter, carrying the latter point even to excess. English cameras, unless of specially seasoned wood, are apt to warp in our dryer climate, and I do not believe in, and certainly never saw, a single American worker using a wooden slide in his plate holder.

Most of our finest cameras are made to have the ground-glass keep its position, even when the holder is slipped into place, and the tripod top is made distinct from the camera, which latter I am not sure is an advantage.

Practical demonstrations and clear plain talks seem to be most enjoyed at our society meetings, and when papers are read it is a rare case when the lecturer is not afterwards called upon by different hearers to explain various points still farther.

Dry plates are most generally used, though a few cling persistently to the wet process. One amateur I know of who coats all his lantern plates, and another in preparing his takes into careful consideration the special purpose for which they are to be used.

Only a few of our manufacturers make slide plates, and I consider it as somewhat unwise to make them more rapid than English ones, which actual demonstration has proved to me is the case. It is claimed that slide-making is losing in interest, but such entertainments are always well attended, though the audiences seem to pay more attention to the subject of the slide than to its technical or artistic merit. We trust that European workers will in time see the advantages of our size negative and slide-plates and that there is no actual need of using such very heavy cover glass. International exchange of slides is an idea worthy of cultivation, and is of value specially in encouraging all to do their best. Several of our amateurs have experimented in camera making, and of shutter attachments there is no end. Our national fondness for haste has found a new vent in a kind of craze for instantaneous (I use the word under correction) pictures of racing, athletics, scientific experiments, etc., but, on the other hand, that same tendency leads us to constantly invent practical, labour-saving appliances wherein I claim we hold high rank, and many of our best workers have either personally made many such or suggested them to some manufacturer, while one amateur has invented a shutter which allows several exposures per second. Orthochromatic work (or, I should rather say, colour-sensitive) is receiving more attention than formerly, as the plates improve. They were supposed to be very difficult to develop, but at some of our recent exhibitions remarkable results from them have been shown, especially as regards flowers and delicately-tinted drapery. As is well known, Mr. Ives is the only one among us who has succeeded in demonstrating what is hoped for from colour photography, but even yet he has a difficult task before him. Ordinarily, we depend for our finest lenses on foreign makers, but there has been a new one placed recently on our market by a New York amateur which, in the way of reducing harsh contrasts and allowing the shadows and half-tones to appear as in the gradations of nature, practically enters the field of orthochromatic work. It has a violet-colour attachment which can be screwed into the place of the rear combination of the maker's rapid rectilinear, wide-angle, or portrait lenses. It slightly increases the time of exposure, and the eye is at first disturbed by the use of the coloured, instead of the colourless lens, but the results are remarkable, especially with portraits. The makers are also busy with a tele-photo lens similar, in some ways, to Dallmeyer's and Miethe's.



No. 4.] "FISHING STATION." *[C. Tyler.*

There is a reluctance with us, as in England, except among those amateurs who have been given over as incurable, to carry a size camera which will permit the picture to properly represent the view photographed. Even when intended for use in the lantern, the picture takers too often prefer contact slides, simply, it would seem, because their physical strength is really or apparently inadequate to the carrying an 8 by 10 or 5 by 7 camera for the negatives, to say nothing of the extra exertion of reduction, but as the French proverb says, "That which costs nothing is worth nothing." With regard to developers, many of us like hydroquinone, more still like it mixed with eikonogen, and others eikonogen alone, though I believe the majority, for regular work, prefer pyro and soda, as ammonia does not seem to agree with our plates. It would seem a good plan to test each new developer as it appears, for then, and only then, can the worker be really justified in making a choice. A number of our workers are expert chemists, and always prepare their own developers, not pinning their faith on 10 per cent. or any other made solutions. As one of our writers has said, "A fool or a folly is no better for being an old fool or an old folly," and if any method of work or modification of it suits our purpose, we do not wait until it is overgrown by the mass of tradition before recording our acceptance. Film rolls are much used in hand-cameras, though maga-

zines are preferred by those who keep to glass plates, and their number is increasing. Albumen and other glossy surface prints have been most generally used, though they are being superseded with our amateurs by the various matt-surface papers, especially bromide and platinum.

The question of exhibitions is not yet considered, as it should be, a valuable factor in photographic education, and we do not have enough of them. I cannot but wonder sometimes that judges are found willing to face the almost certain blame attaching to them, no matter how conscientious they may be. They are fallible, very much so, like most of us, and naturally praise what seems good to them, whether the general verdict agrees with theirs or not. The true benefit of an exhibition is gained when one ascertains not merely wherein his work excels, but wherein it is deficient. The general impression is growing that boards of judges should not be formed exclusively of either photographers or artists, as each is apt to be influenced by the prejudices of his own special education.

When will it be understood, both sides of the Atlantic, that photography in its dual nature of art and science is not necessarily a house divided against itself, and why is it not possible, as in the story of the gold and silver shield, to look at the question from both sides? Americans have not shown their full strength at European exhibitions, largely because notices of such rarely reach us in time for us to prepare and send any special work, and some international arrangement ought to be made, certainly on our side, to obviate the annoying delay in the Custom House. But I do not propose to discuss the tariff question.

Photographic literature should not be entirely passed over, and its importance is shown not alone in journals especially devoted to its interests, but by the way in which it is leavening our whole American literature. The daily press in many cases publish a photographic column, constant references are made to the subject, and many of our magazines give considerable space to articles on the work, or illustrate their pages from the results of the camera. Even the way in which the newspaper reporter attempts to be humorous on the subject shows a general interest in it. We have several magazines devoted to photography, professional and amateur, and they have a wide circulation. Our readers demand a great deal, being very particular also how it is presented, and those who undertake to furnish food for the average photographic brain have by no means an easy task.

It is often asked me if photography is not dying out, but I can most positively declare that with us it is most constantly growing. There are almost daily enquiries of everyone who is supposed to be an authority, as to instruments and methods of work, and it rests with our great army of amateurs to make their own place in the world.

Believe in what you are doing, and people will believe in you. The work should be followed not merely for personal credit, but for the work's sake and its value as a mental and moral education. I am glad that America has several representatives at this Convention, feeling it will do much to strengthen the bond of comradeship between kindred bodies of workers. There should be only a sense of generous emulation on each side, and the tie of relationship not be weakened, though the ocean lie between us, for each can and should gain by mutual help.

As our great poet Lowell says:—

> "For mankind are one in spirit, and an impulse bears along,
> Round the earth's electric circle, the swift flash of right or wrong;
> Whether conscious or unconscious, yet Humanity's vast frame
> Through its ocean-sundered fibres feels the gush of joy or shame—
> In the gain or loss of one race all the rest have equal claim."

The Theory of Development.*

(*Continued from page* 94.)

IV.—THE ACTION OF LIGHT ON SILVER HALOIDS.

By H. B. Baker.

It seems to be impossible that the darkening of silver chloride under ordinary circumstances can be due to the formation of a sub-chloride, as this darkening does not take place if oxygen be excluded. Moreover, in a recent communication to the Chemical Society, I have shown that silver chloride may be exposed to sunlight under pure carbon tetrachloride for two months without undergoing any change in colour.

Captain Abney stated some time ago that silver chloride does not darken in a vacuum, but that if a drop of mercury be present the darkening takes place. I have repeated this experiment, but with opposite results—no darkening whatever taking place. Under liquids which can act as reducing agents, darkening takes place at once, but the darkening is due to the formation of metallic silver. When the silver chloride, darkened in air, is treated with chlorine, oxygen is given off; when it is heated in hydrogen, water is produced; when it is boiled with potassium chloride solution, potash is produced: all facts which point to the conclusion that an oxychloride of silver is formed. The absorption of oxygen by the darkening chloride has been measured, and I have come to the conclusion that the formula is probably $Ag_2Cl\,O$.

By keeping the darkened chloride together with oxygen in the dark, the colour disappears and the chloride becomes white, a further absorption of oxygen taking place. This change takes place more readily in red light; the white substance is probably a white oxychloride, containing more oxygen than the dark oxychloride. It darkens slowly when treated with developers, and is soluble in fixing solution. It is possible that cases of over-exposure and reversal may be explained by the production of this white oxychloride. Experiments are now in progress with the view of finding out if this is the case.



No. 5.] "IN DITTON MEADOW." [W. Hayles.

V.—NOTES ON PROF. H. E. ARMSTRONG'S PAPER, "THE THEORY OF DEVELOPMENT."

By C. H. Bothamley.

The electrolytic theory of development is, of course, not new, but it will probably meet with less neglect in consequence of Prof. Armstrong's able exposition. That so-called electro-chemical actions should take place in the process, seems on the face of it so very probable, that there is all the greater necessity to point out that the experimental evidence is at present contradictory. On the one hand we have Eder's experiment of developing an image right through a very thick film, considerably further than the light could have penetrated; Eder's experiment of placing silver wire in contact with an unexposed film in a developer, and obtaining a developed "image" at the points of contact; and Abney's experiments, in which the image on an exposed gelatino-bromide film was made to grow into an unexposed collodio-bromide film placed in contact with it. On the other hand we have Hurter and Driffield's conclusion that no electrolytic action takes place at all. In fact, it is clear that if Hurter and Driffield's results are correct, no electrolytic action does take place. Whilst I consider that their results require independent experimental verification, it may be of interest if I state that I have failed to obtain any experimental evidence that

* From the *Camera Club Journal*.

electrolytic action does take place in the development of an exposed gelatino-bromide plate. I have not succeeded in repeating Eder's experiment with the silver wire, nor in getting any growth of an image in an unexposed gelatino-bromide film placed in contact with an exposed gelatino-bromide film. The failure may be due to want of experimental skill on my part, and I do not in any way regard the results as final. My belief in the electrolytic theory of development, although at one time strong, is, however, now very much shaken, and I hold with Prof. Armstrong that further experiments are greatly needed.

In a paper on the Latent Image, read at the Conference in 1891, I pointed out that, assuming the electrolytic theory to be true, the formation of the developed image of metallic silver takes place in three distinct stages (1) the formation of a *latent photo-image* by the action of light on the sensitive film; (2) the formation of a *primary image* by the action of the developer on the latent image; and (3) the formation of the *developed image* by the action of the developer on the primary image, and the unaltered silver bromide that is in intimate contact with it. It is in respect of this third change that I now regard the evidence as inconclusive. If this change takes place the image must of course grow laterally as well as downwards, and the marvellously fine detail obtained in many negatives seems to me to be almost positive proof that this lateral growth, or what is practically the same thing, this electrolytic growth of the image, takes place to a comparatively unimportant respect, if it takes place at all.

With the general nature of the chemical change resulting from the action of the developer, I am practically in agreement with Professor Armstrong, and may perhaps be excused for pointing out that I advocated a very similar view at the Conference in 1889. I am, however, quite unable to accept the view that the solvent action of the ammonia plays any important part in the formation of the developed image, and my reasons have already been given in my Conference paper.

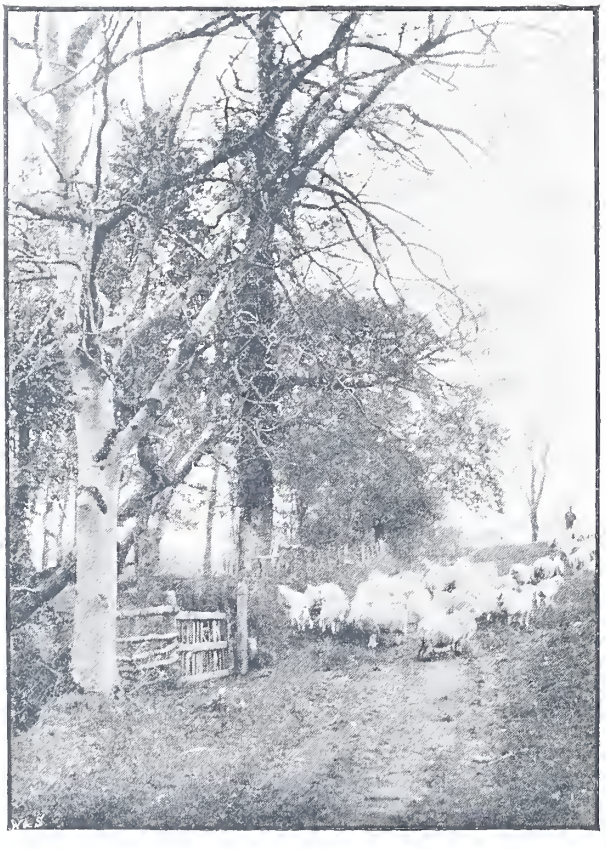
I am unaware of any evidence in favour of the hypothesis that the latent image formed by the more refrangible rays is different in character from that formed by the less refrangible rays. The supposition that a silver oxyhaloid would probably resemble silver oxide in its instability also seems to me to be contrary to the weight of the evidence. Certain it is that darkened silver chloride is not affected by many re-agents that would speedily act upon the oxide.

My own experiments led me to conclude that the soluble bromide plays a less important part in the formation of the image than Prof. Armstrong seems to attribute to it, and than, in fact, is generally supposed (*Photographic Journal*, 1890). Doubling or trebling the amount of bromide within certain limits has very little effect indeed beyond reducing the tendency to produce general fog.

Prof. Armstrong rightly lays stress on the need for further research, but with reference to his suggestion that collodion should be used as a medium I beg to point out that the gelatine process is *the* important negative process, that what we most want to know is what goes on in a gelatino-bromide film, and that experiments made with simple and inactive supports can only afford indirect, and perhaps misleading, indications as to the changes in the presence of a complex and active substance like gelatine.

[The foregoing paragraphs were written very hurriedly at the request of the Hon Secretary after I had read only Prof. Armstrong's paper at the Conference. I have since had an opportunity of reading Prof. Armstrong's further "Note on Reversal," Capt. Abney's "Notes" on Prof. Armstrong's paper, and the remarks of Mr. Elder and others in the discussion at the Club. As I understand, however, that the foregoing paragraphs have been sent in proof to others who are contributing to this discussion, it seems better to allow them to stand as they were originally written, and to explain somewhat more fully my views on some of the points referred to.]

The experimental evidence seems to me to show conclusively that the production of the latent image on a gelatino-bromide plate is a photo-chemical change, resulting in the production of a compound that contains less bromine than ordinary silver-bromides, and is more readily attacked by reducing agents. I hold, further, that the bromine lost by the silver-bromide is taken up by the gelatine. By the action of bromine on gelatine it is easy to obtain products containing more than twenty-five per cent. of bromine, but the chief point of interest is the extreme rapidity with which gelatine absorbs bromine in the early stages of the reaction. The phenomena, in fact, indicate that the product in the early stages is an additive compound, and not, as Dr. Hurtor assumes (*Photography*, 1891, p. 136), a substitution derivative. This attraction of gelatine for bromine I regard as one of the chief causes, *inter alia*, of the great sensitiveness of gelatino-bromide plates.



No. 6.] "IN SCARVA DEMESNE." [*J. McCleery.*

Whilst I have been unable to obtain any evidence of electrolytic action in the development of gelatino-bromide plates, and my belief in the occurrence of such action has naturally been shaken, I am bound to admit that if Hurter and Driffield's results could be left out of consideration, the balance of evidence would be decidedly in favour of electrolytic action. The invisibility of the latent image is generally regarded as proof that the amount of material composing it is very small in comparison with the quantity of reduced silver resulting from development. So long as it seems probable that the latent image is similar in composition to the darkened product obtained by the prolonged action of light, this argument will remain very weighty. It is not impossible, however, that the material of the latent image is similar in colour to the unchanged silver bromide.

It is not impossible to reconcile the occurrence of electrolytic action with the rendering of minute detail to which I referred in a former paragraph. The granular structure of a gelatino-bromide film is well known. Each particle of silver-bromide is intimately associated with some gelatine, the association most probably being molecular in character, but each particle of the bromide is separated from neighbouring particles by a layer of gelatine that contains no silver salt. If we assume, as seems most probable, that the electrolytic action does not spread across this intervening layer of gelatine, but is confined to those particles, some molecules of which have been altered by light, then it is easy to conceive that the lateral spreading of the image might be so small as not to obscure the fine details. This hypothesis is in agreement with the well-known fact that plates with a fine grain are necessary for the rendering of line subjects and minute detail. If, however, the restriction holds good, it

does not seem *necessary* to assume electrolytic action at all, and Captain Abney's hypothesis of the successive formation of silver sub-bromide by the action of the reduced silver on the bromide with which it is in contact, the sub-bromide being continually reduced by the developer, is sufficient to explain the facts. It may be of interest to point out that Captain Abney's view is greatly strengthened by the recent isolation of the sub-salts of silver by Guntz.

Returning now to the question of the action of ammonia in the alkaline developer, and more especially to the part played by the solvent action of ammonia on the silver-bromide, I naturally regret that Prof. Armstrong attaches no importance whatever to my statements on the subject. Prof. Armstrong, however, is not entitled to assume that I forgot that the silver-bromide was wrapped up in a colloid bag. I did not forget. On the contrary, I had constantly in mind the fact that in gelatino-bromide emulsion the silver-bromide is enclosed in a colloid, and, moreover, remains enclosed in that colloid throughout all the operation of development. In view of the well-known fact that silver-bromide under these conditions is less easily acted upon by reducing agents and other re-agents, it seemed, and still seems, to me to be of importance to ascertain whether ammonia of the strength used in the alkaline developer does actually dissolve silver-bromide from gelatino-bromide emulsion. Although the silver-bromide is wrapped up in the colloid gelatine, this colloid is readily permeable, a fact shown by the rapidity with which plates can be developed and fixed. There is therefore no question but that if the silver-bromide were dissolved at all, it would pass through the gelatine into the surrounding liquid, especially when the time of contact was so long as in my experiments. The fact remains that ammonia of considerably greater strength than can safely be used in alkaline development dissolves a barely recognisable trace of silver-bromide from gelatino-bromide emulsion after much longer contact than in ordinary development. In presence of quantities of a soluble bromide such as are used in developers, not even a trace of silver-bromide is dissolved.

I have made, at one time and another, scores of careful experiments on the influence of varying proportions of ammonia and soluble bromide in the pyro-developer, and my conclusions, most of which I have stated before, in various papers, are as follows:—

(1) So far as regards the development of an image in those parts of the film that have been affected by light, the ammonia developer does not differ from those in which there is no suspicion of any solvent action on the part of the alkali.

(2) That as soon as the ammonia is used of such strength or with so low a proportion of soluble bromide that it does exert a solvent action on the silver bromide in the film, then at once general fog begins to be produced and silver is deposited on the exposed as well as on the unexposed parts of the film.

(3) The ammonia developer differs from other alkaline developers, not in the mode of production of the image but in the much greater tendency to produce general grey fog, green fog, etc., the solvent action of the ammonia being the chief active cause in the production of these fogs, but not of the true image.

The occurrence of silver compounds in solution in an old pyro-ammonia developer, as reported by Professor Meldola to Mr. Elder, is quite in accordance with my results. It is very common indeed for the pyro-ammonia developer to be used of such composition that it produces distinct general fog, because, as I have already stated, it does dissolve some of the silver bromide in consequence of the strength of the ammonia or the small proportion of soluble bromide used.

With regard to Mr. Elder's most interesting remarks, I will simply point out that the active constituents of the developer are always present in relatively very large quantities compared with the amount of silver salt that is produced, even when the reduction attains its maximum.

As regards reversal, the explanation given by Meldola in his "Chemistry of Photography" seems to me to be the most rational and satisfactory that has been yet proposed. It may be of interest to call attention to H. J. L. Rawlins' experiments (*J. Soc. Chem. Ind*, 1891, 18), which lead him to the conclusion that it is practically impossible to obtain second reversal. I have tried many times myself but have never got any indication of such second reversal.

VI.—NOTES ON PROF. H. E. ARMSTRONG'S PAPER, "THE THEORY OF DEVELOPMENT."

By Captain W. de W. Abney, C.B., R.E., F.R.S.

To clear the ground in reference to the theory of alkaline development, it is well to take into account two distinct actions which may occur during its accomplishment. In the first place, if we have pyro and ammonia present, it may happen very well that the first shock of development is very similar to that of the wet process, viz., a solution of the silver salt. Weak though the solution of ammonia may be, it will dissolve an infinitesimal amount of silver, and the pyro will tend to reduce and deposit it on the parts which have been changed by light. What I have called the formation of a nucleus for the silver to deposit upon is necessary, and it is very likely that the silver which can be much more easily separated from a solution than reduced from a solid wall deposit on the photographic image, and form the nucleus on which the visible image can be built up. The other action is that of which the paper offers an explanation, and is that which probably exists where the alkaline carbonate is used in lieu of ammonia in a solution of which silver bromide is apparently insoluble, and the image has to be built up from solid matter. The solution of the problem by Dr. Armstrong is that the action is an electrical action. That there is an electrical action produced goes without saying, for we know that the intensity of the photographic light and the comparison of the developing power of different developers acting on a silver salt have been measured by the current which has been produced. But the question arises, Which is the cause and which the effect, and are they not inseparable one from the other? In the symbolic reversible equation put forward by Dr. Armstrong, as that which may happen, he has—

$$\text{Latent Image} \;..\; \left|\begin{matrix}\text{Ag Br}\\ \text{Ag Br}\end{matrix}\right| \left|\begin{matrix}\text{H}\\ \text{H}\end{matrix}\right| \text{O} \left|\begin{matrix}\text{H}\\ \text{H}\end{matrix}\right| \text{C}_6\text{H}_4\text{O}_2$$

$$\text{Latent image} \;\rightleftharpoons\; \left|\begin{matrix}\text{Ag}\\ \text{Ag}\end{matrix}\right| \left|\begin{matrix}\text{BrH}\\ \text{BrH}\end{matrix}\right| \text{O} \left|\begin{matrix}\text{H}\\ \text{H}\end{matrix}\right| \text{C}_6\text{H}_4\text{O}_2$$

and when the alkali is present, this is modified by replacing H_2O by K O H.

Now, it seems to me that this will scarcely hold as it stands, and is not quite analogous to the De la Rue cell, for in it we have a zinc and a silver plate opposed, and a solution of ammonium chloride, the silver chloride not in the main affecting the question, being a depolarizer. In Dr. Armstrong's equation we have a solid (latent image) opposed by a liquid containing not only what he assumes to answer to the zinc, but also what to the ammonium chloride, and there is no reason to think that such would act like a De la Rue cell. If we look at the bodies which really are opposed, we find that we have bromide of silver altered by light and bromide of silver. Now, this is much more analogous to the copper-zinc couple (which all those who are acquainted with chemical literature understand); the sub-bromide would take the place of the copper and the bromide of the zinc, and these must be what I may call at a different potential. If electrical action is to explain the phenomenon of development, it appears that we need not go further than this, and is in accordance with experiments which I made some years ago and published, from which I concluded that bromide of silver would not exist as such when in such contact as that in which the zinc and copper are in a zinc-copper couple, but that an interchange would take place immediately, and that we should have a production first of what I will call sub-bromide, and finally metallic silver. The couple would then be represented by silver bromide and metallic silver, and the difference in potential would be greater, and the action would be more energetic (which is what we know to be the case) until the electrolyte became inactive.

The electrolyte is the developing solution which is capable of absorbing oxygen, the water of solution being decomposed in the usual way, the hydrogen combining with the bromine. The solution of developer containing alkali is naturally in a better state for fulfilling the conditions of an electrolyte, and it may be partly for this reason that a solution of pyro by itself is incapable of developing a plate. [An interesting developer is made by pyro and sulphite of soda alone. These two alone will develop a plate after receiving prolonged application; but in this case the image appears to be developed by the solubility of the silver

salt in the developing solution. I think that, omitting the bromide of potassium, the developing solution must be looked upon as a whole and (except in the case of solubility in an alkali) not as of separate components.

I do not agree with Dr. Armstrong as to the action of light being electrolytic. I think that the more simple explanation is given by considering it as a problem in molecular physics, and is more apt.

In reference to the darkened product of chloride of silver, I may interpose a remark. I have, like Mr. Baker, obtained a silver chloride *in vacuo*, thoroughly dried and free from moisture, and have had it for years in the sun without darkening, but some of the same chloride treated similarly, but in which at one end of the tube a drop of mercury had come over blackened, and calomel formed in the tube, and the blackening continued till the mercury had become converted into or been totally covered by this compound. In this case it may be presumed that the blackened chloride was not an oxy-chloride. The effect of oxygen on the latent image has been described by myself, and how ozone will destroy its developing power. Apparently this, on the electrical theory, is due to a want of difference in potential of the latent image and the bromide. The image may be again rendered developable by allowing a proper regulated stream of nascent hydrogen to pass over the surface.

The phenomena of reversal is one which I have long made a study—a study which I may say is incomplete—and there are phenomena connected with it which are curious to say the least. If, on a dimly-lighted white sheet I throw a spot of bright red light, and photograph the sheet on a plate which is not sensitive to the red, I find that instead of a uniform deposit to represent the image of the white sheet, the red spot comes out much less dense, showing that the red light renders the work done by the white light undevelopable. That is not what one would expect, for the same illumination of white light is all over the screen. If, instead of photographing this on a plate exposed to the air, it is photographed on a plate exposed *in vacuo*, or in a solution of nitrite of potassium, the reversing action apparently disappears. This phenomenon is really the same as that described by Claudet when he obtained a reversed image of a red sun, not due to over-exposure, however. Reversal then may be from several causes, only one of which I have noticed, but it appears that the others may be explained on the theory of oxydation. In experimenting on these points, it must not be forgotten that it is useless to use a gelatine plate which contains a substance which renders any deductions to be made from it doubtful.

It is worthy of remark that collodion dry plates, after exposure, keep but a short time under ordinary conditions, but, if kept away from oxygen, will keep very much longer. From these considerations it seems to me that we have to conclude that the image can scarcely be formed by an oxy salt, since these are difficult to develop. The explanation offered by Dr. Armstrong of course may be correct, but I think experiments of a crucial character may be devised to try if it is correct. As to recurrent reversal, I think there is not much known at present, but this I will say, that if the exposure be so prolonged that we get a suspicion of metallic silver, then the electrical theory, on the principle of couple zinc-couples, might account for it, for a difference in potential would again be established. Jansen, I believe, obtained this reversal on tannin plates.

Table of Plate Speeds.

THE following table of the speed of various plates has been compiled by Mr. Alfred Watkins from actual tests in the camera, and is corrected to June, 1892, the developer used being pyro 2 gr., bromide 1 gr., ammonia 2 min., meta-bisulphite of potash 1 gr., water 1 oz. "These numbers must only be regarded as approximate and a guide to the first trial; for in the first place few makes are always issued at the same sensitiveness, and in the second place different workers vary in their method of development and in their idea of what a negative ought to be. . . . The numbers are all calculated for fully-exposed (not merely pretty) negatives, the developer used having a minimum of alkali. Many good workers, especially those using stronger developers, find they give over-exposure, and therefore use numbers one-half greater, or even double, those suggested."

This table is calculated for use with Watkins' exposure meter, but is applicable to any other system of exposure.

(COPYRIGHT, BUT PUBLISHED BY SPECIAL PERMISSION.)

PLATE NUMBERS.

Approximate only, and no guide to *quality* of plates.

	P.		P.
Barnet	25	Imperial Extreme Rapidity	80
„ Studio	25	*Marion Ordinary	35
Edwards' Landscape	15	„ Instantaneous	70
„ Special Portrait	50	„ Academy	40
„ Instantaneous	30	Mawson Castle	25
„ Isoch. Medium	25	Mawson	80
„ Instantaneous	60	„ Photo. Mech.	8
England, Slow	4	Paget XXX.	35
„ Ordinary	15	„ XXXXX.	80
„ Rapid	35	„ Phœnix	20
Fitch, Films	30	Rouch Slow	3
Fry, Ordinary	5	„ Extra Rapid	15
„ German	5	Thomas, Special Landscape	8
„ Kingston Special	16	„ Extra Rapid	35
„ 60 times	40	„ Cyclist	60
Ilford, Ordinary	15	Sandel General	40
„ Rapid	25	Verel 60 times	80
„ Special Rapid (new issue)	80	„ 30 „	3
„ Isoch. Medium	30	„ Matchless	35
„ „ Instantaneous	80	Wratten, Ordinary	8
Imperial Ordinary	30	„ Instantaneous	40
Imperial Extra Rapid	50	„ D. Shutter	45

Films are same speed as corresponding brand of plates.

AMERICAN PLATES.

	P.		P.
Carbutt B.	5	Harvard	30
„ Eclipse	40	Newcomb and Owen	40, 55
Cramer B.	15	„ „	30, 24
„ 60	60	„ „ slow	—
Stanley	80	Carbutt Special	26
New Eagle	45	„ Special Ortho and Stripping	23
Seed 23	25	„ B20	12
„ 26X	45	Chautauqua	20
„ 26	30	Peerless	45
Allen and Rowell Slow	5		
Eastman transparent film (marked 28W)	40		

FOREIGN PLATES.

	P.		P.
Monckhoven	15	Beernaert	40
Kiefell	20	Lumiere Rapid	80
Sachs	20	Schippang	25
Westendorp	50	Werth	40
Schleusner	50	Angerer	55
Obernetter	60	Weisbrod	60
„ Eosine	50	Matter	60
		Nys	15

† LANTERN PLATES. P. NUMBERS.

	P.		P.
Fry	13	Mawson	3
Thomas	2	Edwards' Special	4
Ilford Special	6		
Eastman	6	Carbutt A.	18

† BROMIDE PAPERS.

	P.		P.
Eastman Slow	6	Ilford Slow	3
„ Rapid	40	„ Rapid	30
Fry's Argentotype	8	Dr. Just	4
Morgan and Kidd	15	Anthony Slow	50
Anthony Rapid	50	Mawson	6
Eastman's Transfero.	6		

* Marion's plates are now marked with a speed number (Actinograph) which multiplied by 1⅔ gives the P number. Thus, Act. 40 = P 60.

† These species compare with each other only, and not with negative plates.

"ABSOLUTELY RELIABLE."

EXTRACT FROM A LETTER, DATED AUGUST 4TH, 1892, FROM

FRED. H. DAVIES, Esq., Hon. Sec., Talbot Photo. Album Club.

"I should like to say how pleased I am with both your

'BARNET' AND 'STUDIO'

Plates. **The Coating is simply perfection,** and it seems to me to be **richer in Silver** than the majority of plates on the Market."

IF YOU cannot obtain these Plates of your local dealer, send direct to the Manufacturers,

ELLIOTT & SON, Barnet, Herts.

Wratten & Wainwright's

CELEBRATED

"LONDON" PLATES,

"ORDINARY" (15°). For Landscapes, Copying, and Transparencies.

"INSTANTANEOUS" (19°). For Studio and General Work.

"DROP-SHUTTER SPECIAL (24°). For Dull Weather and Hand Cameras. The most rapid Plate made.

Have been manufactured continuously for fifteen years, and have never yet been approached in quality. They are recognised by the most competent authorities as the standard by which all other Plates are judged. These Plates are indispensable for the production of Exhibition Pictures. More High Class Medals have been secured by results on the "London" Plates than all others combined.

Wratten & Wainwright's

SENSITIZED PAPER

HAS THE LARGEST SALE AND HIGHEST REPUTATION, KEEPS WELL, TONES EASILY, AND **DOES NOT BLISTER.**

Post Free—per Quire, 13/6; Half-quire, 7/-; Quarter-quire, 4/-; 3 Sheets, 2/3; Sample Sheet 10d. Cut Sizes, 1/- per Quire extra.

APPARATUS, CHEMICALS, ETC., OF THE BEST QUALITY ONLY, AT LOWEST MARKET PRICES.

Catalogues and Estimates Free.

WRATTEN & WAINWRIGHT, 38, Great Queen Street, Long Acre, London, W.C.

TELEPHONE No. 2776. TELEGRAPHIC ADDRESS: "WRATTEN, LONDON."

HURTER & DRIFFIELD'S

ACTINOGRAPH.

NOW READY FOR THE FOLLOWING LATITUDES:

20°	0′ North.	Sandwich Islands, Mexico, West Indies, Cuba, Nubia, India, Burmah, China.
47°	30′ „	Canada, Newfoundland, France, Switzerland, South Germany, Austria, South Russia.
52°	30′ „	Canada, Great Britain, Holland, North Germany, Northern Russia.
57°	30′ „	North Canada, Scotland, Sweden, St. Petersburg, North Russia.
30°	0′ South.	Buenos Ayres, Monte Video, Chili, Cape Colony, Western and Southern Australia, New South Wales, Victoria.

The following are in preparation, and will shortly be ready:—

0°	0′ Equator.	40°	0′ North.	20°	0′ South.
10°	0′ North.	62°	30′ „	40°	0′ „
30°	0′ „	10°	0′ South.	47°	30′ „

Read the following

UNSOLICITED TESTIMONIAL.

2, ST. MARY'S ROAD, CANONBURY, N.,
July 14*th*, 1892.

Messrs. MARION & Co.—Gentlemen,

I have been trying your three qualities of Plates—Ordinary, Rapid, and Instantaneous—on a variety of out-door subjects, in bright and dull weather, being guided as to exposure by the new Actinograph (Hurter & Driffield's Patent), and "speed" marked upon the packages. As the result I find the system uniformly successful, for I have not lost a single plate.

Yours very truly,

JOHN SPILLER, F.C.S., F.I.C.

MARION & CO., 22 & 23, Soho Square, London, W.

The Collodio Chloride Printing-Out Process.*

By G. H. Moss.

This process is a very old one. It was first introduced by Wharton Simpson in 1864, but it has not been used much in England until recently. In America and on the Continent it has been extensively used for some time past, on account of the better results obtained.

One of the most important articles used is high temperature pyroxyline or gun cotton. The pyroxyline obtained at the ordinary photographic dealer's is perfectly useless for this purpose, being far too tough and horny. It is impossible to coat the paper without considerable trouble. It will also frill and blister in the toning and fixing bath. What is desired is a powdery cotton such as may be obtained at Rouch and Co.'s, Strand, who manufacture it especially for collodion emulsion processes.

To prepare the emulsion, first take 16 gr. of sodium chloride and 16 gr. tartaric acid; add 30 minims of hot water. When dissolved add 3 oz. of methylated alcohol; this should be purchased at a reliable shop, as many small dealers do not sell the pure article, but substitute methylated finish, which is useless for this purpose. In another bottle put 120 gr. silver nitrate and 60 minims hot water. I generally put the bottle on the kitchen hob to dissolve by heat. When the silver has all disappeared add methylated spirit 3 oz.

Now take a 20 oz. bottle and put in 90 gr. of gun cotton, pour the silver nitrate solution to this and shake well for a minute or two, then add 5 oz. of methylated sulphuric ether; shake up well until all is dissolved. It will then form a light greyish-white emulsion of silver nitrate in collodion. Up to this point the emulsion can be prepared in daylight.

The solution of chloride and tartaric acid is now added, a very little at a time, to the collodion. Directly a drop of chloride enters the collodion it will then turn milky. The bottle should be well shaken at each addition of the chloride. When all is added and well shaken, the emulsion must be put aside for about twelve hours to allow all the impurities to settle. It is then filtered through a piece of wadding.

The emulsion is now ready for coating the paper. The ordinary lithographic paper answers well; it is coated with a solution of arrowroot. Those who would prefer purchasing the paper ready for coating, I would recommend the support for the single transfer paper sold by the Autotype Co.; it is a paper coated with an insoluble gelatine.

I always coat my paper in a double frame, which holds it tight and prevents the emulsion from running over the edges. (The frame produced resembled a common drawing slate minus the glass, with a hole in the corner to pour any excess of emulsion off).

The coating is done in the same manner as in the wet plate process. The paper should be used as soon as possible. It will not keep more than about a week, unless it is floated on an acid bath like the commercial albumenised paper before coating; it will then keep as well as any silver paper in the market.

The printing should go on until the deep shadows are bronzed, as it loses a little more in fixing than albumen paper. It prints much quicker than albumen paper, especially in winter. Any toning bath may be used; in fact, it is treated exactly the same as the ordinary sensitised paper, and can be dried between blotting paper. No dust will adhere to it, as in gelatino-chloride paper. The fixing bath should not be stronger than 1 oz. hypo in 10 oz. water. Fixing is completed in about eight minutes, after which the prints should be washed in running water for an hour. This process is, I believe, as permanent as any silver process can be. There is no treacherous albumen to deal with, and yet there is the ease and simplicity of albumenised paper. Captain Abney states these prints should be permanent and possess a *rare* beauty. Anyone who tries this method of printing will very soon discover that they have a remarkable amount of detail compared with other silver paper, whether gelatino-chloride or albumenised. Opal glass can be coated and printed out, toned, etc., the same as paper.

The emulsion will keep a long time if kept in a well-corked bottle and in a dry, non-actinic light. I always use a red bottle, as it can then be handled in daylight without any trouble.

* Read before the South London Photographic Society.

One's Own Photograph.

By the Rev. Edward Husband

(*Incumbent of St. Michael's, Folkestone*).

Amateur photographers are often asked by their friends, in common with other persons, for a photograph of themselves, and it is pleasant to their friends to let the photographs be those taken by the amateur photographers themselves. And there is also this advantage, that it enables the subjects to feel perfectly natural and at ease with no one in the studio to look on except themselves. I adopt a very easy and simple method, which I should like to describe to your readers, in the hope it may prove of some help to others under the same circumstances. All that is wanted is a head-rest in front of the background. Put yourself naturally into position, after having fastened a piece of string across the studio the height of your eyes from the ground. Then move forward till, standing in



the position you have chosen for the photograph, the string presses gently against your eye-lid. Then reach behind you, and pull the head-rest forward to its proper place, the string in front touching your eye-lid as directed, and the head-rest comfortably pressing against the back of your head. If you have any fear that the head-rest shows in front, rig up a looking-glass in front of you, and see if all is right. Then move quietly away, and hang a little piece of closely-printed paper over the string just in the place where your eyes would be. Go to your camera, focus the printed matter sharply; set your shutter for a time-exposure at the speed required, draw your slide (having removed the string), and stand just where you did before, your head gently pressing against the head-rest. Of course, attached to your shutter you have a long piece of tubing, with an extra large pneumatic ball. Hold the ball in your

hand in such a position that neither ball nor tubing will show in the negative. Then press the ball, and give the exposure required, and the deed, so far, will be done. I send you a photograph in platinotype which I took in this way last week of myself, on one of Edwards's instantaneous Isochromatic plates. The negative has not been retouched in any way, but is just as it came out of my developing dish, except that it has been dried and varnished, as I wish to let your readers see the result just as it was produced by my string and printed paper process, like the old lady before she went to the wig-maker and the manufacturer of false teeth. I ought to add that it is well to use a small stop, say *f*/32, and ensure sharpness under somewhat adverse circumstances. In this way anyone can become his own photographer.

Holiday Resorts and Photographic Haunts.

DORKING.

DORKING, situated in Surrey, twenty-five miles south of London, is a place which every photographer should visit. It can be reached by the London, Brighton, and South Coast Railway or the South Eastern, and is within an hour of London. The town is the centre of a very lovely district, in which many excursions can be made, both photographic and otherwise. A small stream—the Pip Brook, runs through the town, and forms two large mill, ponds, or rather one mill-pond in two sections, by the side of which there is a pleasant walk under the shade of some old willows. Passing along this path, which is entered over a bridge by a mill at the commencement of the town, the photographer makes a detour which brings him out by the parish church, a modern building in the perpendicular style erected in 1875, which can only be photographed with a wide-angle lens. From the church a narrow passage leads back into the High Street. Keeping to the right for some distance brings him to the junctions of South and West Streets with the High Street. Near this corner is the post-office, and by keeping down a turning beside it, he will come to an inn, the Old King's Head, which was formerly called the Marquis of Granby, and which Charles Dickens has rendered famous as the hostelry at which Samuel Weller used to put up. Returning to South Street, and keeping along the Guildford Road for some distance, he will come to a turning on the right which will take him to an old Elizabethan farmhouse, called Milton Court Mill. This is rather difficult to photograph, on account of its position. Across some fields is Pixholme Mill, where a plate may be exposed. Another path leads to Castle Mill, where another plate may be exposed. Then keep through Betchworth Park—some of the trees of which are very fine—towards Reigate, or along the road outside the park, and across Betchworth Bridge and up Box Hill, and down by the Burford Bridge Hotel, which should be photographed, and across the Mole by a picturesque bridge.

Another tour may be made by crossing the common to the south of the town known as Cotmandene, and through the Glory Woods to Holmwood. E. T. H.

Societies' Meetings.

Belfast.—On the 7th inst. the usual monthly meeting was held, Mr. T. B. Scott presiding. The prints in the monthly competition were on view, the awards having been made as follows:—First prize, J. A. Pollock, "Ess na Crub" Waterfall at Glenariffe; second place to J. McCleery for "A Rest at Noon," a study of sheep in Scarva Demesne; and third place to W. H. McCleery for "Easter Snow," at Glenariffe, Co. Antrim. Messrs. Houghton and Son, London, sent one of the new Shuttle hand-cameras for inspection of the members; the ingenious method by which the plates are changed and shutter set by the one movement should make it one of the most popular in the market.

British Association.—Mr. O. W. Jeffs presented the report of the Committee on Geological Photographs, which stated that the number of photographs received and registered since the last meeting of the Association was 112, bringing the total contents of the collection to 700. The committee urged upon geologists the desirability of promptly assisting the scheme, in order that their work might be proceeded with as quickly as possible. A vote of thanks was passed to the committee.

Dewsbury.—Monthly meeting on the 11th inst. Owing to the technical school being closed for the vacation, the meeting was held in the Infirmary Board Room, at the invitation of the Secretary, Mr. C. J. Abbs. No special business being down for this evening, the members present indulged in a pleasant chat on various matters photographic. Sample packets of Paget Prize Plates were handed round, and a number of prints from negatives on the Paget plates were shown by the Secretary, G. Kilburn. The prints shown were made on the new paper by the Eastman Photographic Company, also a number of prints by other members on the same make of paper. Several members stated their experience in working both the Ilford and Eastman papers. It was decided to have an outing to Bolton Woods on Saturday, August 27th.

Fairfield Camera Club.—The eighth ordinary meeting was held on 9th inst., the President (Mr. J. L. Mackrell) in the chair. After the election of new members he proceeded to explain and exhibit Mr. Paul Lange's new hand-camera. Owing to the absence of the lecturer for the evening, Mr. Mackrell gave a practical demonstration on "The Reduction of the Density of Negatives Locally and Otherwise." This he dealt with in his masterly manner, it proving a most interesting and instructive subject. Some fine prints in the new cold-bath platinotype process, the work of Mr. Stockdale, were exhibited and greatly admired.

Hackney.—Meeting held on 9th inst., Mr. Arthur Barker in the chair. The Hon. Secretary distributed samples of the Paget plates and Ilford printing-out paper. A discussion ensued on the latter. Mr. Hensler said he noticed a difference in the colour, which was sometimes red and sometimes violet. He preferred the latter. Mr. Nunn differed. Mr. Beckett said some negatives were more suitable for one colour than another—blue paper lost the most in bath. Mr. Dean handed round a frilled plate. Mr. Dando said it was very much forced. Mr. Hudson showed some cheap sheaths made by Chipper. Mr. Nunn showed some examples of work on the Paget Phœnix plates, which he had been very successful with. Mr. Reynolds also reported favourably of the same plates. Mr. Poulson asked the chairman's opinion of the Eastman gelatino-chloride paper. The Chairman said he had used a quantity, and was very pleased with results. The Assistant-Secretary informed the members that the excursion next Saturday, 13th inst., would be to Theydon Bois. Meet at that station at 2 40. Mr. Roofe was nominated. Mr. W. G. Roberts, of Leytonstone, then showed his hand-camera, which could be used on a stand and focussed as an ordinary camera. Although being of a magazine kind, changing could be done in daylight by carrying extra small magazine. Mr. Dando then proceeded to read an excellent paper on "Stereoscopic Photography." He attributed the discovery to Sir Chas. Wheatley. A half-plate camera had been used by Mr. Dando for his work, and he said he had found it an advantage, as extra height was allowed. Two different pictures could be taken, if desired. Another advantage in the size mentioned was that half-plates could always be obtained. He preferred the shutter just before the plate, and lenses of from 5 to 7 in. foci. One of the great difficulties was to get them accurately paired. He did not like the iris diaphragms. Sometimes apertures were not equal. Give plenty of exposure, and develop rather thinly, and get plenty of detail. Mr. Hensler asked how to tell when accurately paired. Mr. Dando said: Take lens out, pass thin piece of wood through one of the stops so that the wood is marked all round, then repeat on the other. Further discussion was postponed until next meeting.

Harlesden and Willesden.—A meeting was held on the 9th inst. Mr. Clapton gave an interesting lecture upon the subject of lenses. The Secretary, Mr. Woodbury, of 23, Fairlight Avenue, Harlesden, is particularly desirous that the existence of the Society be made known to the numerous amateur photographers residing in this and neighbouring districts, and will be happy to give all information to those likely to join.

Hove (Camera Club).—On the 9th inst. the Hon. Secretary (J. Williamson), gave a demonstration on the manipulation of gelatino-chloride paper. Some prints were toned in the sulpho-cyanide bath, some in the borax bath, and some in a new toning and fixing bath recommended by the Eastman Company. Those toned in the sulpho-cyanide baths were fairly satisfactory, but it was found that in order to secure an even tone the process had to be continued rather beyond the tone desired. Unevenness of toning appeared to be the general experience of the members present in using this bath. It was suggested that this might be due to acidity of the bath, which further experiments were required to prove. The borax bath which had been prepared the previous evening absolutely refused to tone until some more gold had been added; toning

then took place very satisfactorily. The combined bath, in two solutions, mixed at the time of using, toned quickly and evenly, giving a rich warm purple, longer toning giving a darker colour. Doubts were expressed as to complete fixation of the prints, but the demonstrator passed round a print which after being in the bath for three minutes and exposed to two days sunlight showed no degradation. Mr. Williamson said that this appeared to him such an extraordinary combination—containing hypo, alum, and the sulphate of potash and soda in one solution, and chloride of gold and sugar of lead in the other—that he hesitated to use it. However, a representative of Eastman's firm had shown him some remarkably fine specimens which had stood some severe tests, and after giving it a fair trial he had no hesitation in recommending its use. Care must be taken not to put the prints into ordinary hypo solution after this bath, or a splendid example of sulphur toning would result. If further fixation were considered necessary it should be put into the No. 1 solution (without gold) for a short time. One print each of Ilford P.O.P. and Eastman's gelatino-chloride were toned in each bath, and the tones obtained in each case were identical, although the Ilford prints were purple and the Eastman brownish-red. Washing by changing the prints from one dish to another of fresh water was recommended in preference to leaving the prints in running water, and by squeegeeing the prints between each change elimination of hypo was considerably hastened. The process of finishing, enamel or matt, was then shown. Backing with waterproof paper was not approved of. He experienced no difficulty in mounting enamelled prints. Two were shown which had been coated on the back with dextrine paste before removing from the glass; these were damped with a soft sponge, and adhered perfectly to the mounts without damaging the surface, a piece of waxed paper being used to rub it down with. A number of specimen prints on Ilford printing-out paper and Eastman's paper were passed round for inspection, and some samples of printing-out paper sent by the Britannia Works Co. were distributed. Sample packets of the Paget Prize plates had also been distributed. A Cantilever enlarging apparatus was shown by the Secretary.

Liverpool (Camera Club).—The usual meeting was held on the 10th inst., the President (Dr. Webb), occupying the chair. The minutes of the previous meeting having been read and confirmed, Mr. W. A. Brown reported on the club excursion to Rabymere and District. Owing to the thin attendance of members (on account of the holiday season) it was resolved that the results of the Paget Prize Plate exposures be left over until another meeting. The next meeting will be held on Wednesday, 24th inst., when a paper on "Optics for Amateurs," will be given by Mr. H. Handley.

Nottingham Mechanics' Institution Camera Club.—The meeting of this club, which was well attended, was held on the 9th inst. The minutes of the previous meeting were read and confirmed. A unanimous vote of thanks was passed to Lord Middleton for his kindness in permitting the members to visit Wollaton Hall, to Mr. W. Wright for his courtesy in making the necessary arrangements in connection with the visit, and to Mr. Harris, who acted as cicerone on each occasion. The Secretary (Mr. J. T. Radford) reported that the Committee of the Club had decided to offer three prizes for competition amongst the members for work done on the excursions up to the end of the year. A cordial vote of thanks was passed to Mr. Flowerdew for his extensive exhibition of photographic apparatus and appliances, and his explanation of them to the members at the last meeting, after which there was an exhibition of stereoscopic slides, etc., kindly lent by Mr. H. A. Jackson, and also an exhibition of members' work in connection with the excursions to Wollaton Hall, etc., which were inspected with great interest by the members present. It was announced that the book on "Photography" by A. Brothers, F.R.A.S, had been ordered to be bought, and it could be seen by the club members at the library on application at the librarian's counter. Excursions are to be made this month to King's Mills and Cromford and Matlock.

Richmond. — On the 12th inst., the President in the chair, the Hon. Secretary distributed sample packets of plates sent by the Paget Company, and printing-out paper sent by the Britannia Company. He then said that he had some difficulty in stripping gelatino-chloride prints that had been squeegeed on glass: would xylonite slabs answer better? Mr. Cembrano (the President) had never had a failure in squeegeeing. When using the Ilford paper, he commended for this paper a combined toning and fixing bath. The xylonite slabs mentioned would be a capital substitute for the focussing screen, provided they were made sufficiently rigid and transparent. Mr. Davis recommended rubbing a little powdered pumice stone to get rid off the small bright specks on matt-surface prints. In opening the discussion on "Developing Under-exposures," Mr. Davis said he employed the old method of first soaking the plate in a weak solution of the accelerator, pouring this off and applying the usual developer; this system answered well when the plate was known to be under-exposed, but there was danger of spoiling the negative if the exposure happened to be a full one. Mr. Ennis preferred diluting the developer with four times its bulk of water, then when the image was well out, he would use the fresh developer containing little bromide. Mr. Hunter would begin with a developer containing less pyro, ammonia, and bromide, and when all the possible detail was out, he would strengthen it by adding plenty of pyro and more ammonia. Mr. Cembrano thought that if the plate was really undertimed no good could be done with it. It was in under-exposure that defects in the manufacture of the plate would become very apparent. He believed, that in practice there was no real advantage of any one developing agent over another. When having a good subject, the best and safest plan would be to expose two or more plates on it. Mr. Ford had not succeeded in real cases of under-exposure, not even after developing for two hours. To gauge correctly the exposure for subjects under trees was a difficult matter. Mr. Ennis found the soda devcloper recommended by the President to work well for hand-camera exposures. It was made as follows: Sulpho-pyrogallol, 10 per cent., 20 min.; washing soda, 10 per cent., 240 min.; bromide potassium, 10 per cent., 2 min. Make up with sulphite of soda 10 per cent. to 1 oz., instead of plain water. Mr. Davis found it was essential to use bromide with the pyro-potash soda developer. Mr. Ennis asked for the best way of mounting glazed gelatino-chloride prints. Mr. Davis said Houghton's Excelsior mountant was good. Mr. Ford added that india-rubber solution answered, but it caused the prints to fade. Mr. Ennis had had a similar experience with this mountant when mounting prints on albumenised paper.

Sheffield.—The ordinary monthly meeting was held on the 9th inst., Mr. B. J. Taylor in the chair, when after the usual routine business of the meeting, the final arrangements were made for the week-end excursion to Whitby, which bids fair to be a great success. The Secretary passed round among the members sample packets of the Paget Prize Plates for members to report thereon at the next meeting. Several members also gave in their report in reference to Eastman's printing-out paper, which was considered very satisfactory. It was also arranged to send the annual competition pictures to London for judgment.

Spen Valley.—The monthly meeting of the above Society was held on the 9th inst., Dr. Farrow, President, in the chair. The adjudication in the monthly competition, the subject of which was "Caught," was proceeded with, the prize being awarded to Mr. J. Burnhill for a picture of a rat in a trap. This was also the time appointed to judge the prints sent in to the Sutherland competition, and as it was the first competition of the kind in which any prize of value had been competed for, there was considerable interest taken in it. The subject was to be Lower Blamp Farm, from a given aspect. There were ten exhibits, all of which were very creditable to the competitors, the prize being awarded to Mr. H. Jackson. A discussion then took place as to the best means of judging photographs at future exhibitions.

Stockton.—The usual monthly meeting was held on the 9th inst., Mr. H. Macdonnell presiding, at which Mr. Ellam, the Hon. Sec., gave a practical demonstration in the making and varnishing of window transparencies, from negatives brought by the members. Success crowned the demonstrator's efforts, and delighted a large attendance of members. Sample packets of plates, kindly sent by the Paget Prize Plate Company, were afterwards distributed amongst those present.

Tyneside.—A general meeting was held on the 9th inst., when Houghton's Shuttle hand-camera was exhibited, the Secretary describing and working the ingenious instrument. The Paget Company sent samples of plates, which were delivered to the members. Ilford "Scraps" were also delivered.

Warrington.—The usual meeting was held on the 9th inst., a large number of members being present. In the absence of the President, Mr. T. J. Down, Mr. H. N. Houghton presided. A practical demonstration on the working of the "Ilford Printing-Out Paper" was given by Mr. G. H. Brown, Penketh, commencing first by giving its history, the manufacture, the advantages over other silver papers, rules to be observed, printing, toning, fixing, defects and remedies. Prints were passed round showing the various colours obtained through injudicious handling, such as stained fingers, dirty dishes, etc. Two prints were next washed, toned and dried on glass with successful results. Mr. Lawson, of Newton-le-Willows, another member, introduced to the meeting his patent limelight saturator as shown before the London Lantern Society. Judging from the ingenious make and its simple action, it bids well for success, especially to those lanternists who are in the habit of exhibiting in the country, where hydrogen gas cannot be obtained, the saturator doing away with this gas altogether. Mr. Lawson is making a new one on the same lines that can be made to fit into any lantern.

Wolverhampton.—The monthly meeting was held on the 9th inst., Mr. H. Holcroft (President) in the chair. Mr. J. Gale, one of the Society's most prominent members, who was announced to give a paper on "Ammonio-Nitrate of Silver Printing on Rough Drawing

Paper," tendered an apology for being unprepared to give the paper in the explicit form upon which he had based his promise, preferring rather to postpone the subject for a week or two pending scientific experiments. With a view of relieving the tedium of suspense, therefore, Mr. W. Radcliffe exhibited a "home-spun" camera and stand, and a shutter, which he stated had actually cost him but a single penny. The President expostulated upon the many and varied attempts to obtain genuine and natural cloud results, and as Mr. Holcroft is a gentleman of wide experience, his address was listened to with much earnestness. The Honorary Secretary (Mr. J. W. Evans) announced that he had been supplied with a free sample parcel of dry plates by the Paget Prize Plate Company, of Watford, for distribution amongst the members, who expressed their willingness to see what they were like. The latter portion of the proceedings was devoted to arranging a half-day "brake" excursion, which, after a little diversified controversy, was arranged to take place on Saturday, the 27th inst., Worfield being the rendezvous.

York.—The first meeting in the new room, Victoria Hall, was held on the 9th inst. The members had been invited to bring their recent work for inspection, and as a good response was made to the request, a very pleasant and profitable evening was spent in examining the various specimens exhibited. The President (Mr. F. Vincent) showed prints from half-plate negatives enlarged from lantern-slides by means of a Griffiths' fixed-focus enlarging or reducing camera. Mr. G. Pawson had a large series of whole-plate negatives of black and white reproductions, and as they included examples of nearly all the known methods of development and intensification, a comparison of the same was very instructive. A pyro-ammonia developer, and mercurial intensification with ammonia, was considered to give the most successful results, although one plate intensified with uranium was very good. The difficulty in this branch of photography is to obtain sufficient density, and at the same time retain the lines of the print as absolutely clear glass. Mr. Dickinson had some prints on the Ilford printing-out paper which showed in a very comprehensive manner the range of tones obtainable by means of this process. Mr. Hick showed two negatives of the interior of a church—one on a well-known make of dry-plate, in which, notwithstanding the usual precaution of "backing" the plate had been taken, halation was very strongly marked, while the other negative taken on the Sandell plate, with ten minutes longer exposure, was totally free from the slightest sign of the defect, and a comparison of the two afforded a striking example of the value of the new plate. Mr. Hick also showed some excellent examples of portrait work printed on the Ilford printing-out paper. Mr. Redpath showed negatives of Jesmond Dene and Goathland, and Mr. Tittensor a large collection of stereoscopic negatives.

SOCIETIES' FIXTURES.

Aug. 19.—LEWISHAM.—"Stereoscopic Photography," by H. L. Henderson.
,, 19.—RICHMOND.—Informal meeting.
,, 19.—HOLBORN.—Demonstration on Alpha Transparencies, by E. H. Bayston.
,, 20.—LIVERPOOL.—Excursion to West Derby and Croxteth.
,, 20.—PEOPLE'S PALACE.—Excursion to Waltham Cross and Abbey.
,, 20.—ELIZABETHAN.—Outing to Welwyn.
,, 20.—CARDIFF.—Ramble to Caerphilly Castle.
,, 20.—WARRINGTON.—Ramble to Dunham Park.
,, 22.—TYNESIDE.—General Meeting.
,, 23.—HACKNEY.—"Suitable Printing Process for a given Negative," R. Beckett.
,, 24.—LIVERPOOL.—Paper on "Optics for Amateurs," Mr. H. Handley.
,, 24.—CROYDON.—Evening Ramble (Geological).
,, 24.—LEYTONSTONE.—Special General Meeting.
,, 25.—LONDON AND PROVINCIAL.—Members' Open Night.
,, 25.—OXFORD.—Walk.
,, 25.—WARRINGTON.—Ramble to Gateacre and Childwall.
,, 25.—NORTHAMPTONSHIRE.—Excursion to Brampton and Althorp.
,, 26.—RICHMOND.—Show of Prints.
,, 26.—HOLBORN.—Lantern Night.
,, 27.—TYNESIDE.—Excursion.
,, 27.—WEST SURREY.—Outing to Carshalton.
,, 27.—RICHMOND.—Excursion to Carshalton.
,, 27.—OLDHAM.—Ramble to Oldham Wakes.
,, 27.—BRIGHTON AND SUSSEX.—Excursion to Bramber, Coombe, Botolph.
,, 27.—LIVERPOOL.—Excursion to Rossett and Gresford.
,, 27.—CROYDON.—Photographic Ramble.
,, 27.—HACKNEY.—Bromide Enlarging.
,, 27.—SOUTH LONDON.—Excursion to Hyde Park and Albert Memorial.

"**The Bohemian**" caravan has arrived in London, and the Duke of Newcastle and Mr. Gambier Bolton have returned with a number of very interesting negatives, and a long list of most amusing adventures. We hear that the Queen has presented Mr. Gambier Bolton with a handsome white Scotch collie from her private kennels at Frogmore. An account of these, illustrated by Mr. Gambier Bolton, appeared in the pages of our contemporary, *The Stock-Keeper*, last spring.

Professor Vernon-Boys on Electric Spark Photographs.—The second of a series of evening lectures and one specially for artisans, was delivered in Edinburgh on 6th inst. by Professor C. Vernon-Boys, South Kensington, London. The subject was "Electric Spark Photographs, or Photography of Flying Bullets, etc., by the light of the Eleetric Spark." Professor Vernon-Boys said the subject he took up that night was that of the mode of investigation pursued when that subject of investigation—whatever it might be—was moving at so great a speed as not to admit of its being examined in the ordinary way. In dealing with instantaneous photography he was dealing purely with the mechanical and not the photographical subject. Instantaneous meant something that lasted so short a time that to their senses it lasted no time at all. The Professor then by means of a large carboard clock face revolving at a high speed showed that by the magnesium flash the figures could not be distinguished, while an electric spark lit up the dial plate, and distinctly brought out the figures. To further illustrate the photographing of articles in motion a view was thrown on the screen of an express train in motion. The next view was that of a soap bubble in the act of bursting, and after explaining that by the electric spark articles moving at the rate of 10,000 miles an hour could be photographed, the Professor stated that by the introduction of a revolving mirror, a speed of 180,000 miles an hour could be coped with. The mirror—one being shown working—made 1,024 turns every second, worked by electricity, which was equal to about one hundred and fifty times as fast as a rifle bullet travelled. The whole photographic power of the spark was over in a time equal to the ten or eleven millionth part of a second. Proceeding to the subject of photographing rifle bullets in motion, he said that so far as he knew the first photograph was taken in Austria by Professor March, who caused the bullet to travel between two wires joining an electric circuit, and thus producing the electric spark. The Professor next explained in what his method differed from that of the Austrian Professor, and demonstrated the actual working of the experiment, the bullet being shot, a few yards distant, into a box of bran, the photograph being taken in its transit into the box. An ordinary camera was used. Views were next given of many photographs taken by the Professor, commencing with a bullet fired by a pistol, next of a Martini-Henry bullet, and last that of one from a magazine rifle. Special attention was drawn to the clearly-defined air waves shown on the photographs—the angles of these waves being more acute the greater the speed at which the bullets travelled. The magazine rifle bullet, travelling at a speed of 2,000 feet a second, had very acute air-waves, while in the trail of the bullet was seen the air disturbance like the turmoil of water in the wake of a steamer. Up to a certain rate of speed the air waves were horizontal, but beyond that speed they gradually became vertical. A view was also displayed of a choke ball after being fired with No. 8 shot, showing that the spread of the shot was only three or four times the diameter of the barrel of the gun at about three yards from the muzzle. The lecturer concluded with views of a bullet going through glass.

Improved Photometers.—Photometers, involving the employment of materials such as selenium, that are sensitive in respect of their electric conductivity to the action of light, have not, up to the present, proved very successful, owing mainly to spontaneous alterations in the materials themselves. To overcome this difficulty, Mr. E. Thomas, of 18, Sisters-avenue, Wandsworth, S.W., ingeniously proposes that the photo-sensitive arrangement should be subjected *alternately*, in rapid succession, to the light to be tested and to a standard light. The mean effect while facing the one light may then be compared with that produced while facing the other. One method of carrying out the invention with a selenium cell consists in mounting this upon an arbour capable of being rapidly rotated. While facing one light, contact is made automatically, so that a current flows through a galvanometer for a small fraction of a rotation. And when, in the course of its movement, the cell faces towards the other light, contact is again made for an equal fraction of the rotation, but the current now flows through the galvanometer in the opposite direction. This is repeated many times a second; and, of course, provided that the cell is equally illuminated by the two lights, the galvanometer will not be affected. Instead of rotating the cell itself, a mirror or mirrors, or other optical device, may be rotated in such a manner as to subject the cell alternately to the two sources of radiation, or suitable optical arrangements may be made for cutting off the radiation from the two sources alternately by means of a moving screen.—*Optician.*

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5788. **Enamelling.**—Will any brother amateur, or professional, kindly describe the art of enamelling who has had some experience therein, and detail the constituent parts of ingredients used? By doing so he will oblige a fellow worker.—THOS. CLARK.

5789. **Ilford P.O.P.**—Can anyons tell me why the Ilford P.O.P. should turn yellow in toning? Sometimes one print will turn yellow and another from the same negative will not do so. I have to take ths prints out very quickly; the longer they are in the bath the yellower they become, and still worse in the hypo. I like a warm sepia tint, but do not wish for bright yellow. I was told that I must have got some hypo in the toning bath, but I do not think I have any. I use a sulphocyanide bath, according to ths directions given with the paper. My negatives are not varnished; would that affect the paper?—MANFIELD.

5790. **Instanto. Shutter.**—Will one of your readers kindly stats ths quickest and also the slowest speed of the shutter of Lancaster's Instantograph camera?—WILLIE.

5791. **Dark-Room Wanted.**—Can any reader inform me of the address of a dark-room at Strathpeffer, Scotland?—TORRIDON.

5792. **N. Ireland.**—Will someons kindly oblige by giving information about North Ireland, viz., Portrush and ths Giant's Causeway? Would Portrush be the best place to stay at, and are the hotel charges moderate? Any other information will greatly oblige. —CANTABRIGIA.

5793. **Bromide Paper.**—In developing with the Ilford (or any other) hydroquinone formula, is it necessary or desirable to use an acid clearing bath; and if so, why?—DOZEY G.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

July 15th.—No. 5756.
,, 22nd.—Nos. 5763, 5768.
,, 29th.—Nos. 5777, 5778.
Aug. 5th.—Nos. 5779, 5780, 5781, 5785, 5786.

ANSWERS.

5766. **Sat. Sol. Hypo.**—The strength of sat. sol. hypo varies according to temperature, but at 62 deg. Fahr. the following results of careful experiments may be relied on for practical photographic purposes:—1 oz. of hypo crystals is contained in 9·35 fl. drms. of sat. sol. 1 oz. fluid of sat. sol. contains 374 gr. of crystals. 1 oz. of water will dissolve 736 gr. of crystals, the measure of ths solution being 15½ drms. It is a good plan to keep an excess of hypo in soak in large jug, stirring well, and giving plenty of time for perfect saturation, and occasionally filtering a portion into a stock bottle. A solution of any given strength can then be made in a moment.—J. M. COATES.

5772. **Powell's Compressed Gold Baths.**—Use these with less water; say the contents of a tube dissolved in a *quarter*, instead of half a pint of water, and procurs the Ilford printing-out paper as fresh as possible; you will then have no difficulty in producing deep tones.—J. VEALE WILLIAMS.

5787. **Yarmouth and Lowestoft.**—I do not think "Trix" will have much difficulty in finding plenty of pretty little bits near Lowestoft and district. To commence with, Lowestoft and Kirkley churches are well worth an exposure, one or two nice views of the harbour and pier may also be found, but most of the pretty bits are found outsids Lowestoft. The following places will afford many nice pictures for a half-plats camera:—Entrance to Belle Vue Park and Jubiles Bridgs, and High Light, Corton, Carlton Colvills, The Denss, Pakefield, Kessingland, Southwold, Oulton Broad, St. Olaves, and Fritton Decoy, Burgh Staiths, Brundall (for Surlingham Broad and Ferry), Wroxham Broad and Horning Ferry, Hickling Broad. Norwich is also worthy of a visit with the camera, ths most interesting views being the cathedral, castle, and river. At Yarmouth the following are to to be noted:—Church, market, and the suburb of Gorleston. Ssveral of the above places ars within walking distance of Lowestoft, and the remainder may be reached by short railway journeys or drives. And, lastly, if "Trix" is fond of the water and rowing, an innumerable variety of pretty bits may be obtained on all the rivers and waters near Lowestoft and Yarmouth.—MAC.

5787. **Yarmouth and Lowestoft.**—There are so many thing worth doing here that to enumerate them would take far too much space. I can assure "Trix" he would find ample employment for a week or ten days, or even more, at Yarmouth. There are the docks, steamers, town hall, beach, fishing and pleasure boats, old church, the Rows, etc. At Lowestoft, the North Park, sands, fish markets, etc. At Beccles, the quaint old detached tower and fine old church, avenue, market place, River Waveney, etc. I am staying here for a few days, and shall be pleased to give "Trix" any information—Address with Editor. —DOZEY G.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

G. L. WOOD.—Add bicarbonate of soda to make bath alkaline. If you use the combined baths as recommended by the Eastman Company, and do not use them too long, you need have no fear as to the permanency of the prints. Although distilled water is preferable, it is not absolutely essential and would not make much difference.

R. DUDLEY TUCKER.—Direct enlargements are barred from competition.

S. ROUT.—The peculiar positive-liks appearance of your negative is due to the silver being deposited in an allotropic white coudition. It really need not trouhle you, as it is quite harmless.

F. A.—The description of your stained negative reads as though only half of it had been washed, and the stained half left in contact with the air. We are afraid there is nothing to be done for it, but if you will send us up the negative we will see.

POPE GREGORY.—Bauseh and Lemb's new diaphragm shutter is the nearest approach to what you want; Whittingham and Co., Charterhousc Square, are agents.

J. T. TITMAN.—You cannot do better than get the lens you name; they are about the most satisfactory in the market.

TRIX.—(1) We cannot state whether the R R. would fit in your flange, anyhow it would not be a difficult matter to adapt it. (2) The differnces of exposure with two different lenses depends solely upon their ratio aperture, that is to say on the ratio of the diameter of the opening of the lensos. In ths "Merveilleux" this is about *f*/11, or 1-11th of the equivalent focus of the lens: in an R R. lens, this is usually *f*/8, or one-eighth of the focus, and the exposures are as 8:11 squared, or as 64:132, or practically the R.R. lens would require about half the exposure with Merveilleux. We are afraid almost to give you any guide to the exposure in a cathedral, but ws should say that you will not err much if you give about half an hour, especially with a well-lighted place. (3) We prefer prints sent in to Holidays with Camera Competition on separate mounts, and they may be anything taken during the holidays, except pure portraiture of figure studies. (4) Halving the water is doubling the strength of the bath, consequently if 8 oz. is too little for your dish use 16 oz., only add 2 gr. of gold to it.

WM. RUSSELL.—We never undertake to buy or sell for our readers; the only thing we will do is to report on apparatus if desired, for which we charge 2s. 6d.

A. FLETCHER.—We would rather advise you to use cut films in your dark slides. The printing operations are exactly the same as for plates, and if you will write in about a fortnight's time, enclosing stamped addressed envelope, we will write you privately and send you some specimens of work done with films by us.

G. H.—So far as we can trace, the only mention of stannous chloride as a developer, except Hunt, is a note by Eder, who states that alkalins stannous chloride solution acts very faintly as a developer, and that its power is very inferior in this respect to pyro or even ferrous oxalate.

A. WEBSTER.—The complaints we receive on the subject you name are very general, so much so that next month we hope to be able to institute a few experiments to see what can be done to remedy it. Our experiences so far leads us to say, considerably overprint and use the combinsd bath.

INQUISITIVE (Bons).—(1) In all hydroquinone developers temperature plays a far more important part than with other agents. The temperature of the developer should be about 70 deg. F. If frilling is to be feared you should use the alum and hypo fixing bath of Lainer, which effectually chocks it. (2) The want of sharpness you deplore in our reproductions is undoubtedly due to the process, and not always to the print. On the other hand, printing on rough-surface papers is gaining ground rapidly in England, and this leads to suppression of what is called "obtrusive detail." There is a tendency of "artistic research," if you like to call it so, for general haziness or "fuzziness." (3) Undoubtedly the single. Next to the portrait lens proper, the best lens for portraiture is the single lens, but it should work at a larger aperture (at *f*/7 or *f*/8, then you get beautifully soft results. (4) All our competitions are open to all our readers, provided they are amateurs, no mattor where they live. Write and ask us for entry forms, and we will gladly send you them on. A. The figures are hardly necessary, and do not add to the artistic effect. B. Extremely inartistic. It is doubtless a very difficult subject to treat, but the straight line of the bridge, the blank foreground and blanker sky ars terribly distressing. C. Again of poor interest, the blank white patch of the Koubba is too glaringly white, and the right hand of the print is not required. D. Hers you have about two inches too much foreground; the road is utterly without interest. E. Might well serve as a specimen of hand-camera work, only there is too evident posing "to be took" about the boys, and, although probably truthful, your blank skies would be improved by clouds. In technical work your prints are fully up to our standard, but we are afraid they are below as regards artistio qualities. The prints shall go in our specimen album. By all means try in our competitions.

ISO.—Your name shall be entered in our list. There are some mistakes, but we hope not *many*. A. 1 and 2 are up to standard, but what a pity to have spoilt 2 by the utterly incongruous figure! we should actually be tempted to cut the print in half, so as to cut the figure right out. B. No, tho "Optimus" Competition would not disqualify you from ours. C. Certainly, if you improve a print so much there is no objection to your re-entering it. D. This is a very difficult question to answer; you do not say whether you are going to photograph pigments or natural objects, and there are so many different greens and yellows. Will you write more fully, and we will try and answer you more satisfactorily.

QUIZ.—We have a paper in type on "The Harmonising of Harsh Negatives," read before one of our London societies, which will probably give you all the information you desire. However, the following is Eder's method, and one we have used for some time with very good results. Soak the plate in water till the film is soft, then immerse in

Hydrochloric acid, pure	1 part
Alum	10 parts
Bichromate of potash	5 ,,
Water	100 ,,

till the image is bleached quite white, through the film, then wash thoroughly, say for half an hour in running water, and then redevelop with a ferrous oxalate devcloper, with bromide added. As soon as the thin portions have developed thoroughly, and before the dense portions have become black on looking through the back, wash and fix. There will be a much more harmonious result. The alternative method is to paint the back of the negative with red or yellow matt varnish, and scrape it away from all parts, except those which you wish to keep back in printing The marks on your negative to which the paper stuck are "silver stains," caused by absorption of the free nitrate of silver by the damp gelatine, and it is almost a hopeless task to try and remove them. The remedies suggested, which are not without danger of removing the image entirely, are, first, a weak solution of cyanide of potash, or secondly, ferridcyanide of potash, and sulphocyanide of potash; unless it is a valuable negative, our advice is, throw it away. We shall always be glad to help you to the best of our ability.

NEWS.—Pyroxylin is, according to its mothod of preparation, a mixture of dinitro, trinitro, tetranitro, pentanitro, or hexanitro cellulose, and is made by acting on cotton wool with a mixture of nitric and sulphuric acids, or sulphuric acid and nitrate of potash, washing and drying. The best pyroxylin is either a mixture of tetra and trinitro cellulose or tetranitro cellulose only. Fallowfield or Adams, Charing Cross Road, or Mawson and Swan, 33, Soho Square, would supply you, and the price is about 1s. 4d. per oz.

J. M. COATES.—Many thanks for answer. Entry form sent on.

W. G. ROBERTS.—Letter duly received, and contents noted.

ROSE.—The print would be better if a little more deeply printed. It is also spoilt by the too evident posing of the figures.

CONSTANT READER.—(1) It would be advisable for you to write to the Editor of the paper named, and ask his permission to utilise his cuts as lantern slides and do the same with the publishers of book and photographs; this would get you out of any possible

trouble. (2) Wood's washer is very satisfactory in action. (3) Do you want a hand-camera for plates, films, magazine, or dark slides?

M. EGERTON.—Thanks for correction.

GEO. H. JAMES.—There is a book by Blake on the subject, the title and publisher of which we will try and find out for you.

STANLEY BROOK.—The negatives may be used for prints in any competition.

G. EMERY.—You will find on pages 12 and 22, full information on the toning of gelatino-chloride prints. Use the bath recommended on p. 22, which, if not used too long, will not reduce the permanency of your prints.

D. S. WHITELAW.—We have used the solution named with successful results ever since its introduction, therefore the statements are not true.

A. J. D.—Letter by post.

EMIGRANT.—Provided the apparatus, etc., is for your own personal use, you would not be charged.

F. G. BENSON.—Apply early, and then you will only have to pay carriage one way, as the slides will reach you on their rounds.

EMIGRANT—Pocock and Co., 7, Short Market Street; Heynes, Matthew and Co, Adderley Street; Lennon and Co., all of Cape Town, stock plates, chemicals, etc. In most large towns, too, you will find a photographic dealer.

Sale and Exchange.

RULES.

CHARGE.—Twelve *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* **2½** *per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

ADVERTISEMENTS *can be inserted under a number' the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.,** *or a commission of* **2½ per cent,** *upon the sale price of the apparatus.*

Cameras, etc.—First-class half-plate camera, three double slides, bargain.—Maltby, 172, Blue Bell Hill, Nottingham.

Lancaster's 50s. quarter-plate camera and solid leather case, 30s.—61, Newman Street, W.

Will exchange my half-plate Cleveland, as new, for good hand-camera.—Field, 195, Grundy Street, Poplar, E.

7½ by 5 Ross camera, five double backs, all movements and improvements, practically new, cost 210s., price 105s., sacrifice.—Roberts, 77, Benwell Road, Highbury, London.

Cameras, Lenses, etc.—Optimus detective camera, rapid rectilinear lens, cost £6 6s., take £3 3s., or exchange stand camera.—Craven, Flitcham, Lynn.

Dallmeyer 6 by 5 R.R. lens, fitted with Newman's shutter, cost £7, sell £4; Watson's cabinet lens, new, cost 60s., sell 40s.; Lancaster's half W.A. rectigraph, cost 42s., sell 20s.; whole-plate Wray landscape, cost £3, sell £2; whole-plate finest quality square bellows camera, every movement, three double slides, cost £10, sell £6.—Parlby, Cradock Street, Swansea.

Half-plate copying or portrait camera and slide, 12s. 6d.; quarter-plate rack portrait lens, 10s. 6d.; four inch condenser, 10s.; large, powerful ruby lamp, 7s. 6d.—M. Newhouse, 90, Victoria Terrace, Lancaster.

Hand-Cameras, etc.—Cytox hand-camera, leather covered, carries 12 quarter-plates, weight 3¼ lb, 50s.—Dr. Clark, 57, Addiscombe Road, Surrey.

For sale, No. 3 Kodak Junior, case, complete, 20 unexposed films, new this season, approval, deposit, £6.—E. Phillips, Bridge Street, Leatherhead.

Fallowfield's Facile hand-camera, quarter-plate R.R. lens, waterproof case, 75s.—Kerdel, 1, Hanover Park, Peckham.

King's twin lens focussing hand-camera for 12 quarter-plates, quickly changed, by Lever, three finders, one full size of plate, fitted Adams' famous Ideal R.R. lens and Mignon shutter, always set, time and instantaneous, pneumatic release, covered real morocco leather, quite new, never used, cost £6, price £5.—No. 328, office of this paper, 1, Creed Lane, E.C.

Rouch's quarter-plate hand-camera, little used, perfect, £3.—Shelton, 5, Wellington Terrace, Whitby.

Kodak No. 3 Regular, perfect condition, with film for 30 exposures, price £5 5s.—Lister, Taufie d Chambers, Bradford.

Beck's quarter-plate hand-camera; what offers cash?—H., 21, Kidbrook Park Road, Blackheath.

Presto camera, two extra slides, developing and printing accessories, bargain, 10s. 6d.—Strachan, 1, Claremont Road, Surbiton, S.W.

Lenses, etc.—9 by 7 R R., aluminium mount, iris, London made, weight 7 oz., 11 in. focus, splendid instrument, as new; may be seen in the City; list price £7 10s., for 80s.; rare chance.—Apply, G, 2, Crofton Terrace, Kingstown.

Underwood's LL, 5 by 4, new, with instantaneous shutter, iris stops, *f*/11, 1892 pattern, 15s.—Southami, 372, Old Street, London, E.C.

Instantograph lens, half-plate, quite new, good definition, bargain, 16s. 6d.—J. Titman, Alford, Lincolnshire.

Beck's 7 in. wide-angle rectilinear lens, in splendid condition, only used a few times, cost £5 10s. 6d., price 4 guineas; approval, deposit.—Hatfield, 2A, Oriental Street, Poplar, London.

Sets.—Full-plate camera on sale, complete outfit, first class, nearly new. Would take good quarter-plate as part exchange.—A. R. Foster, Thornbury, Bradford.

Lancaster's 1891 half Instantograph, lens, shutter, slide, tripod, three metal slides, case, finder, lamp, dishes, printing frames, etc., £4.—F. Rodwell, Blenheim Terrace, N.W.

Quarter-plate Stereoscopic camera by Horn and Thornthwaite, London, two lenses, two dark slides, tripod, chemicals, etc, comp'ete. What offers?—No. 323, office of this paper, 1, Creed Lane, E.C.

Quarter-plate mahogany camera, rapid rectilinear lens, folding tripod, drop shutter, double back, very cheap, 58s. 6d. — Pres'and, Claverham, Berwick, Sussex.

Meagher's latest half-plate portable double extension camera, extends to 20 inches, double swing back, cross fronts, stereo division and front, three double backs with safety shutters, solid leather case, Ashford tripod, 9 in. aplanat, working at *f*/6, by Suter, of Bath, and Wray wide-angle landscape lens, 7½ in. focus, quite new, been used only a few times, cost £20, will take 14 guineas.—No. 325, office of this paper, 1, Creed Lane, E.C.

Sundries.—Surplus stock to exchange for good half-plate burnisher.—Arthur Jane, Bodmin.

Splendid genuine American organ, 11 stops, coupled in bass and treble, two knee swells, 6 ft. high, £12.—M., 30, Dunlace Road, Lower Clapton.

WANTED.

Burnisher.—Burnisher, in good condition and cheap.—127, Dudley Road, Grantham.

Lenses, etc.—Wanted, an 8½ by 6½ lens, either Dallmeyer's new series extra-rapid rectilinear No. 4 or Ross's universal symmetrical. Must pass Editor of AMATEUR PHOTOGRAPHER. Lowest price for cash to M. Simpson, Priory Road, Aston, Birmingham.

Rollholder.—Wanted, a quarter-plate rollholder of latest pattern.—H. Norris, 15, Seymour Grove, Old Trafford, Manchester.

Stereoscopic Apparatus.—Wanted, Chadwick's stereoscopic camera. State particulars and price to No. 322, office of this paper, 1, Creed Lane, E C.

Stereo camera, with or without lenses, good condition, reasonable.—No. 327, office of this paper, 1, Creed Lane, E.C.

Stereo lenses, paired by good maker.—No. 326, office of this paper, 1, Creed Lane, E C.

Sundries.—Wanted, vols. 1, 2, 3, 4 of AMATEUR PHOTOGRAPHER, unbound and clean; state price.—No. 324, office of this paper, 1, Creed Lane, E.C.

Wanted, AMATEUR PHOTOGRAPHER posted regularly weekly. State lowest terms to Copeman, Henstridge.

Bargains in Cameras and Sets. — 15 by 12 double extension camera, leather bellows, rising and falling front, wide-angle movement, fitted three double slides, as new, take £8 8s.; 12 by 10 camera, double extension leather bellows, wide-angle movement, double dark slide, fitted fine rapid rectilinear lens and sliding stand, a grand lot, £9 17s. 6d.; Optimus whole-plate camera, leather bellows, reversing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterhouse stops, Thornton-Pickard shutter, three double dark slides, three-fold stand and case, £11 5s.; whole plate Underwood instanto, wide-angle movement, leather bellows, double extension, rapid rectilinear lens, iris stops, fine definition, double slide, half-plate carrier and folding stand, as new, take £5 15s.; whole-plate camera by Hare, grand article, leather bellows, double extension, wide-angle movement, double slide, changing box, for 24 plates, also changing slide, Optimus rapid rectilinear lens, Waterhouse stops, brand new three-fold stand and case, take £10 17s. 6d.; 7½ by 5 camera, by Gotz, double extension, wide angle, and all latest improvements, double slide, very fine rapid rectilinear, Waterhouse stops, and folding stand, £5 15s.; half-plate Star camera, by Morley, Spanish mahogany, wide angle, double extension, three double slides, fitted Optimus rapid rectilinear, four-fold stand and case, £7 10s, worth double; half-plate 1892 Instantograph camera, as new, all improvements, fine rapid rectilinear lens, Waterhouse stops, double slide, and folding stand, £72; half-plate International, finest order, all movements, Lancaster's lens, iris stops, instantaneous shutter, two double slides, stand and case, £4 4s.; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; quarter-plate Underwood's instanto, finest order, changing box for 12 ¼-plates, good lens, rotating stops, one slide, folding-stand and case, 35s.; 1891 Instantograph camera, lens, shutter, slides, and folding stand, 32s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

Bargains in Hand Cameras.—Swinden and Earp hand-cameras, carries 20 quarter-plates, fitted Taylor and Hobson's best rapid rectilinear lens, roller-blind shutters and case, as new, £6 15s.; half-plate Lancaster's Rover, latest pattern, Lancaster lens and shutter, as new, 70s; quarter-plate Rover as above, take 42s.; Ideal hand-camera, carries twelve quarter-plates, finest rapid rectilinear lens, two finders, etc., as new, £5 17s. 6d.; Stienheil hand-camera, 9 by 12 centimetres, rapid rectilinear lens, two finders, shutters, carries twelve plates, bag changing, as new, take £4 10s., cost £10 10s.; Optimus detective camera, by Perken, Son, and Rayment, Optimus rapid rectilinear lens, carries six ¼-plates, covered black leather, take £4 4s.; Optimus magazine hand-camera, carries twenty-three quarter-plates, fitted Euryscope rapid rectilinear lens, instantaneous roller blind shutter, two finders, as new, take £5 15s.; Lancaster's Omnigraph, covered leather, good lens and shutter, take 17s. 6d.; and another, 15s.; Samuel's quarter-plate hand camera for twelve plates, quite new, rapid rectilinear lens, two finders, 32s. 6d.; All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

Bargains in Lenses.—10 by 8 Lancaster's rectigraph lens, Silver Ring, iris stops, as new, £3 7s. 6d.; whole-plate portrait lens, rack focussing, Waterhouse stops, works *f*/6, take 63s.; Ross' whole-plate rapid symmetrical, Waterhouse stops, works *f*/8, £4 12s. 6d.; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; half-plate Ross' rapid symmetrical Waterhouse stops, grand definition, quite new, take £3 17s. 6d.; Ross' No. 2 portable symmetrical, finest order, rotating stops, take 45s.; Hockin's Desideratum, half-plate, Waterhouse stops, quite new, 10s. 6d.; Lancaster's half plate wide angle lens, rotating stops, take 10s. 6d.; whole-plate Suter No. 3, landscape rotating stops, about 12 in. focus, quite new, 37s. 6d., lowest; Ross' rapid symmetrical lens, as new, movable hood, Waterhouse stops, take £3 17s. 6d.; half-plate rapid rectilinear, half-plate, by Parker, Holborn, aluminium mounts, as new, take 30s.; Mayfield's 7 by 5 rapid rectilinear, Waterhouse stops, covers well, 32s. 6d.; Wray's landscape, casket lenses, 5 in., 7½ in., and 10 in. focus, iris stops, quite new, £3 17s. 6d.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Rayment, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Cameras! Cameras! Cameras! Lenses! Lenses! Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, Corner Leadenhall Street, City (late Goy's Medium).

Hire! Hire! Hire!—Cameras, Lenses, and Lanterns, etc., of every description may be had for hire by the day, week, or month also by easy instalments. Write for particulars, R. Green, City Sale and Exchange, 54, Lime Street, corner Leadenhall Street, City.

RICHARDS' Patent Corners, for mounting photos, prints, scraps, etc., in albums, scrap books, and mounts, clean, convenient, ornamental, self-contained and always handy, ready gummed, price 1s. the box. 17, Dartmouth Street, Westminster, S.W.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 412. Vol. XVI.] FRIDAY, AUGUST 26, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Monday Afternoon "At Home" is discontinued for the present, but will be resumed on Monday the 5th of September.

Our Views.—South London Photographic Society Exhibition—Fairfield Camera Club—Essex Cycling Union Lantern Show—Convention Matters—Bedford and District Camera Club Exhibition—Hackney Photographic Society Annual Exhibition—Studies in Photography—Notice.

Letters to the Editor.—Adjustment of Hand-Cameras (L. S. F.); Exposures for Interiors (W. H. H.)—A Trip to Chicago (Snowden Ward).

Articles.—Photographic Procedure (Wall)—General and Photographic Chemistry (Conrad)—How to Make a Set of Photographic Apparatus (H. J.)—Study and Practice of Art in Field Photography (Horsley Hinton)—The Theory of Development (Armstrong)—How to Look At Photographs (Sutcliffe)—Harmonising Harsh Negatives (McIntosh)—Photography at the British Association.

Reviews.—La Pratique des Projections (Fourtier).

Apparatus.—Fitch's Film Carrier and Well Dish.

Societies' Meetings.—Burnley—Cornish—Hackney—Lewisham—Southsea—Todmorden.

Editorial Department—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

Terms of Subscription—

United Kingdom	Six Months, 5s. 6d.	Twelve Months,	10s. 10d.
Postal Union	,, ,, 6s. 6d.	,, ,,	13s. 0d.
Out of Postal Union	,, ,, 7s. 9d.	,, ,,	15s. 3d.

Trade Advertisements *are received up to Tuesday morning.*

Publishing Department.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 40.—"Portraiture and Figure Study." Latest day, Sept. 19th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, October 14th.)

The annual exhibition of the South London Photographic Society will be held on Thursday, Friday, and Saturday, 24th, 25th, and 26th November next, at Peckham Public Hall, Rye Lane, S.E. Four medals are offered for competition among members of the South Metropolitan photographic societies. Entry forms can be obtained from the Hon. Secretaries of the societies, or Mr. C. H. Oakden, 51, Melbourne Grove, East Dulwich, S.E.

We are requested to state that the Fairfield Camera Club has removed to their new rooms at the High School, Radstock Road, Elm Park, Fairfield. All communications to be addressed to the Hon. Sec., S. H. I. Smith, 17, Bentley Road, Prince's Park, Liverpool.

The Essex Cycling Union, which is an association for the furtherance of social intercourse between the various cycling clubs of the eastern county, proposes to hold an Inter-Club Lantern-slide Competition, at the "Wilfrid Lawson," Woodford, on 15th October. The following are the rules and conditions:—

(1) The competition to take place Saturday, October 15th, at "Wilfrid Lawson" (large hall), 7 p.m. (2) The proceedings to be interspersed with music; ladies invited to attend. (3) The competition to be open to clubs using the Essex roads (whether affiliated to the E.C.U. or not). Competing clubs to contribute twelve slides each, which may be of any subject, and must be the work of *bonâ-fide* members of the club, amateur photographers. (4) The definition of an "amateur" to be one who does not use photography wholly or partially as a means of living. The slides may *not* be professionally mounted, and to be ordinary lantern size. (5) An entrance fee of 2s. 6d. per club (or 1s. 6d. to affiliated clubs) to be charged. (6) Three valuable prizes are offered to the clubs providing the best exhibits. Three experts will be obtained as judges. (7) Arrangements, etc., for admission to the concert and exhibition will be announced later. (8) Entries must be made by September 10th, and slides must be sent in one clear week before date of exhibition. N.B.—All communications respecting the camera competition must be addressed, W. Charles Russell (Assistant Secretary), 9, Morpeth Road, South Hackney, N.E.

There are doubtless many of our readers who, being members of a cycling club, combine photography with wheeling, and the above will interest them.

We are now receiving numerous specimens of work done at the Convention at Edinburgh, and foremost amongst them we have some very good snap-shots taken by Mr. F. W. Hindley with Fallowfield's "Miall" hand-camera; one in particular of Miss Catherine Weed Barnes, bestowing a

smile on the snap-shooter, is a very good likeness. We hope to be able to reproduce two or three of these shots in our next Illustrated Supplement.

Messrs. Morgan and Kidd, of Richmond, the well-known bromide paper manufacturers and enlargers, have also sent us a very good enlargement of the Convention group, which is really a capital piece of work, and speaks well for the paper and the negative from which it was made.

REFERRING to our note on page 113 as to the forthcoming exhibition of the Bedford and District Camera Club, the Hon. Secretary writes to inform us that "since going to press with prospectus the Council of the above society have decided to add a bronze medal and two certificates in each class in addition to the medals already advertised."

THE Hackney Photographic Society will hold their annual exhibition at Morley Hall, Hackney, about the first week in November, on the same extensive scale as last year. The classes will be:—

(A) Members' work since last Exhibition. (B) Members' work before last Exhibition. (C) Members' work, Excursions. (D) Portrait and Genre (members). (E) Members' Lantern (six). (F) Open, Lantern Slides (six). (G) Members' Stereoscopic. (H) Open, Stereoscopic. (I) Open, Portraiture and Genre. (J) Open Landscape and Seascape, etc. Prints may be by any process, direct or enlarged – opals and transparencies excluded. Forms will be ready at end of September, and may be obtained on application to the Hon. Secretary, W. Fenton-Jones, King Edward Road, Hackney.

OUR publishers announce on another page the publication of "Studies in Photography," by J. Andrews, B.A. The author in his preface states that "in the first few chapters of this book I have endeavoured to consider the claims of photography to rank as an original art," and in subsequent chapters he has given numerous practical hints. The work is illustrated with six collotypes from tho author's negatives. The book contains 200 pages, and is divided into sixteen chapters, which treat of "artistic photography, art in relation to photography, naturalistic photography, photography and colour, light, the artistic use of a hand-camera, composition, light and shade, perspective, photography and science, the study of nature, the study of art, portraits, atmosphere, five photographic factors, round about Jersey with a hand-camera."

The work will be found useful as embodying good sound art principles, written in a clear and comprehensive manner, and with the illustrations forms a handsome addition to the library.

WE wish to draw the attention of our readers to the following announcement:—

In no case will the Proprietors of the AMATEUR PHOTOGRAPHER undertake to buy or sell any goods on commission, nor will they be responsible for the safety of any negatives or prints sent to the Editor of the AMATEUR PHOTOGRAPHER for any purpose whatever, although all reasonable care will be taken of the same.

The Editor claims the right of refusing any print, lantern slide, etc., sent in for competition, without assigning any reason for such refusal.

Letters to the Editor.

ADJUSTMENT OF HAND-CAMERAS.

SIR,—As Hon. Secretary of a photographic society it has been my duty from time to time to examine and report upon various hand-cameras. As my experience with some of these may be useful to both manufacturers and users, perhaps you may consider the following notes worthy of insertion in your valuable journal.

Quite recently I had a somewhat high-price camera sent me by an eminent firm of manufacturers, with a request that I would show it before the society, test it, and report on it. After having made myself acquainted with its design and method of working, which were admirable, both as regards compactness, simplicity, and efficiency, I charged the magazine and sallied forth to fire the necessary shots.

So far all went most satisfactorily, and my favourable opinion of the camera was fully maintained.

On developing, however, troubles began; each one of the negatives being hopelessly blurred in foreground, middle, and distance, showing that no part of the picture had been in focus; there was no appearance of shaking, and when looking into the matter I soon discovered that the lens was about a quarter of an inch out of focus. The camera had adjustable focus; however, instead of the lens being in focus for distant objects when brought right back and having movement *outwards* only for near objects, in this case there was also a totally unnecessary *inward* movement of the lens, which latter caused the blurring, the lens having been pushed right back on the assumption that that was its proper place for distant objects, there being no indication to the contrary.

As this experience of hand-cameras is by no means new to me, and I believe of altogether not uncommon occurrence, I venture to suggest that makers should have each camera carefully examined by a competent and conscientious man, to ascertain:—

(1) That the lens of the fixed focus camera really gives a sharp image on the exposed surface.

(2) That the lens of adjustable focus camera is properly in focus for distant objects when pushed right back as far as it will go, and that the focussing scale for nearer objects be accurately marked and the pointer correctly placed.

(3) That the finders should accurately represent the view given by the lens on the exposed plate, and that truly vertical and horizontal lines should be drawn on the ground glass, and each finder to assist when photographing buildings and other objects having vertical or horizontal lines.

(4) In the design of all magazine cameras, I think provision should be made to prevent the possibility of continuing the changing after all the plates have been exposed; the last plate should, after exposure, be properly protected so as to prevent its being exposed twice.

These points would appear to be almost too obvious to require emphasising, but the fact remains that errors do occur, and probably under the most aggravating circumstances. I believe, therefore, that too much care cannot be bestowed in the first instance on these essential points, and if carefully attended to much discontent with hand-cameras, in every other way admirable, would entirely disappear.

I do not, of course, claim that my remarks apply to every manufacturer or to every camera, but I do assert that even the name of a firm of repute is not always a guarantee against errors of the kind mentioned. My advice, therefore, to every photographer who buys a hand-camera to take with him on his holidays, is that he should on no account leave home without having first, by actual test, ascertained that the camera is in every respect correct, and capable of taking sharply on the plate the views shown in the finders. By taking this precaution he may save himself much disappointment and annoyance when the day of development comes.—I am, etc, L. S. F.

* * * *

EXPOSURES FOR INTERIORS.

SIR,—I noticed in last week's "Editorial" answers that you recommended someone to give half an hour's exposure on a light interior. My own experience is that if the place is really light this would over-expose tremendously. As I have photographed in many of our cathedrals, I have enclosed a tabular statement showing the results of my experience, which may prove of use to others so inclined, if you can insert it. In every case I used an "Optimus" R.R. lens, *f*/32 stop, and developed with hydroquinone, potash and soda, obtaining excellent results. Of course these exposures are relative; darker parts of the same church may take two or three times as long. Stained glass also must be allowed for, as

it lengthens exposure considerably. I may add that I found nothing equal to Eastman's negative paper for this work, although rather slow. The transparent film as now sold does not come near it, often showing halation quite as badly as glass. Since the firm discontinued its manufacture (which I have never ceased to regret) I have found Edwards's isochromatic films, of the medium rapidity, to yield the most satisfactory results. Backing glass plates seems to be nearly useless.—Yours, etc., W. H. H.

CATHEDRAL INTERIORS—EXPOSURES.

Cathedral.	State of Light inside.	State of Weather.	Exposure.	Plate.	Result.	Remarks.
Canterbury	Good	Fine, bright	½ hour	Eastman paper	Fully exposed	Eastman paper is very slow
York	Fair	Cloudy	20 minutes	Iso. plates, medium	Do.	Stained glass accounts for the prolonged exposure
Winchester	Very light	Fine	7 or 8 minutes	Iso. films, medium	Do.	Longer for choir, about ¼ hour
Durham	*Dark	Dull, wet	40 minutes	Eastman paper	Do.	Slow, but excellent negatives
Lincoln	Fair	Fine	20 min. to ½ hour	Do.	Do.	Much stained glass
Gloucester	Light	Do.	¼ hour	Do.	Do.	Slightly longer for choir and ambulatory
Salisbury	Very light	Do.	7 minutes	Do.	Do.	Double this at least for choir
Exeter	Good	Fine, diffused light	¼ hour	Do.	Do.	Lighting very even
Worcester	Fair	Dull, wet	½ hour	Iso. films, medium	Do.	Nave is very dark, give longer
Ely	Do.	Fine	10 minutes	Eastman trans. film	Do.	Films very rapid. Choir darker than nave
Hereford	Nave good, choir very dark	Diffused light	10 min. nave, ½ hour choir	Iso. plates, medium	Do.	The darkest choir I have seen
Lichfield	Good	Fine	20 minutes	Eastman paper	Do.	The stonework is dark in colour
Rochester	Nave good, choir dark	Do.	10 min. nave, 20 min. choir	Eastman trans. film	Do.	
Peterborough	Fair	Do.	¼ hour to 20 min.	Iso. films, medium	Do.	Choir is dark
Wells	Good	Do.	10 min. to 20 min.	Do.	Do.	Much stained glass in choir, hence longer exposure
St. Albans	Do.	Do.	¼ hour to 20 min.	Eastman paper	Do.	

* The Galilee chapel is well lighted, and ten minutes should suffice.

A TRIP TO CHICAGO.

SIR,—Answering the enquiry of your correspondent *re* duty on introducing cameras into the United States, I append a statement of the Consul-General in London:—

"H. Snowden Ward, Esq.,
Memorial Hall, Farringdon Street.

"Sir,—In reply to your letter of the 17th inst., I beg to say that cameras in use, taken over by passengers, are admitted free as personal effects.—Your obedient servant,
JNO. C. NEW, Consul-General."

I should like to remind your readers that I am making all arrangements possible for the comfort and convenience of those European photographers who propose to visit Chicago next year, and that if they will send me their names and address, I can probably give them much information and assistance that will be of value. In any case it will cost them nothing, and every extra name that we get, even of those who hope to go and are not certain, will greatly help us in obtaining special facilities for all.—Yours faithfully, H. SNOWDEN WARD.

London, August 22nd, 1892.

Reviews.

La Pratique des Projections. Vol. I.: Les Appareils. By H. Fourtier. Published by Gauthier-Villars et Fils, 55, Quai des Grands-Augustins, Paris. Price 2 fr. 75 c.

In this volume the author, who is well-known in France as a photographic author, has given us a very good treatise on the optical lantern and the various appliances used with it. A brief historical note opens the work, and after considering the optical principles and apparatus involved in the same, he gives us a good summary of typical forms of lanterns and all accessories.

The work is well up to date, clearly printed, and illustrated by numerous cuts and diagrams.

Apparatus.

FITCH'S FILM CARRIER.

MR. E. H. FITCH, of 34, Angell Road, Brixton, S.W., has forwarded us a sample of his "Perfect" Film Carrier, which we have given a trial during our outings this last fortnight, and found very satisfactory.

The film carrier is a piece of stout Willesden paper, coated on one side with an adhesive material on to which the film is firmly pressed with a pad or roller squeegee, and it adheres well, and when required for development may be easily stripped.

This carrier will be found of very great convenience, and from our experience we can strongly recommend it. The adhesive matter has so far shown no tendency to lose its tackiness.

XYLONITE WELL DISH.

Mr. Fitch has also sent us a specimen of his new transparent xylonite developing dish, with well to receive the developer, so that it is unnecessary to touch the film or plate, as by tilting the dish the developer is received in the well, and the dish containing the negative may now be held up to the light for examination etc. This is a handy contrivance, and useful in all dark-rooms.

South Shields.—A meeting of amateurs was held on the 11th inst. to consider the formation of a photographic society. It was decided to form such a society, and the amateurs present set to work to elect the officers. It was decided that a deputation wait upon Mr. Parry to ask his acceptance of the Presidency, and after consideration, he determined to accept the invitation of the members. The new society has reason to be pleased at this decision. The initial meeting was well attended, and a further increase of members was added to the society at the meeting on August 18th. A very homely evening was spent in discussing difficulties met by the members in their photographic work. The following gentlemen took part in the discussion, viz., Messrs. Parry, Robson, Elliott, and Davidson. The next meeting of the society will be held at the same place, on September 1st, at 8 prompt. The President has kindly promised to read a paper. All communications, etc., must be addressed to the Secretary, Mr. Geo. R. Wood, St. John's Higher Grade School, South Shields.

Photographic Procedure.

By E. J. Wall,

Author of the "Dictionary of Photography."

Section VI.

DEVELOPERS AND DEVELOPMENT.

(*Continued from p.* 100.)

We have considered in our last notes the modification of the ferrous oxalate developer for over and under-exposure; we shall now proceed to consider the modification of the developer for particular subjects.

Developing Plates exposed on subjects with Great Contrasts.—The methods to adopt for the reduction of contrast are easy and very efficacious, the simplest being dilution of the developer with water. The developer must, however, not be mixed as usual; it is necessary to increase the proportion of oxalate; if the normal proportion be 1 to 4, the oxalate must be increased to 6 parts, and an equivalent quantity of water, so that our developer would have the following formula:—

Solution of oxalate of potash	6 parts.
„ „ ferrous sulphate	1 „
Distilled water	7 „

It will be noted that *distilled* water is recommended; this is essential, as will have already been gathered from our previous notes as to the white precipitate of oxalate of lime being formed on adding common water to the oxalate solution.

In cases of very great contrasts the proportion of water may even be increased to 10 parts, and should the lesser quantity be used first and the high lights appear too quickly, the developer may be poured off and more water be added.

The second means is to utilise the solution of hyposulphite of soda, as recommended on p. 100 for under-exposed plates. The third method is that suggested by Eder and Lainer, which is the addition of a few drops (about five) of a solution of iodine and iodide of potash in rectified spirit to every ounce of the developer. This is the best agent to use for the reduction of contrast, but it must be carefully used or excessively flat results are obtained.

Developing Plates, exposed on subjects Wanting in Contrast. To increase contrast with the ferrous oxalate developer is not a difficult matter. The addition of bromide of potassium in larger quantities than usual will increase the contrasts, but more effective still is the addition of citric and tartaric acids, and if 10 per cent. solutions of these acids are prepared one may add from 10 to 60 drops of the solution to every ounce of the mixed developer.

The Citro-Oxalate Developer.

This modification of the ferrous oxalate developer was recommended by Abney in 1881, and it appears to possess equal developing power to the normal developer, and also the advantage that the mixed developer does not become so readily oxidised and will therefore keep better. The actual formula suggested by Abney was as follows:—

Neutral citrate of potash	100 parts
Ferrous oxalate	22 „
Distilled water	4·0 „

The mixture was boiled till perfect solution was effected. In the following year this formula was modified, however, by Abney, and two solutions suggested:—

Solution 1.

Neutral citrate of potash	70 parts
Neutral oxalate of potash	20 „
Distilled water	168 „

Solution 2.

Ferrous sulphate	30 parts
Distilled water	168 „

For use mix the solutions in equal parts.

We have noted the restrainers in general use with the ferrous oxalate developer, but besides these many chemical restrainers have been suggested, such as ferric chloride, alkaline chlorides, ferric oxalate, etc. On the other hand, numerous physical restrainers have also been used, but have given place to soluble bromides. Physical restrainers act merely by making the developer somewhat thicker or less fluid, and consequently the penetration of the film by the developer is retarded. To this class belong sugar, glycerine, dextrine, solution of gelatine and collocin, the latter being formed by the action of sulphuric acid on gelatine.

There are numerous modifications of the ferrous oxalate developer to be found in our previous issues and in photographic text-books, but so little is this developer used now that we need not devote any more space to its consideration.

Development with Pyrogallol.

Pyro, pyrogallic acid, or more correctly Pyrogallol, has for many years been the favourite developer in England and America. Its physical appearances are pretty well known, and therefore need not be described. There are various methods of utilising this, either in the dry state, weighing or guessing the required quantity each time of development, or keeping the same in a stock solution of definite strength and measuring the required quantity out. It may also be used with various alkalis, such as ammonia, the carbonates of soda and potash, or even with the caustics or hydrates of the fixed alkalis. Then again there are various additions made to the developer which have for their purpose the prevention of staining, as a plain solution of pyro, when used with an alkali, very soon becomes oxidised, and deeply stains both the hands and gelatine film on the plate. It is also not so easy to keep stock solutions of pyro without any addition. The additions usually made to the pyro developer are sulphites or other salts of sulphurous acid. It is more usual to utilise these sulphites when one of the fixed alkalis is used rather than when ammonia is the alkali.

(*To be continued.*)

General and Photographic Chemistry.—IV.

By E. C. Conrad, F.C.S.

THE NON-METALLIC ELEMENTS AND THEIR COMPOUNDS.—(*Continued*).

COMPOUNDS OF HYDROGEN AND OXYGEN.

Hydrogen and oxygen combine together to form two compounds, viz.:—

(1) Water, or hydrogen monoxide, $H_2O = 18$.
(2) Hydrogen dioxide, $H_2O_2 = 34$.

Water, *or Hydrogen Monoxide*, $H_2O = 18$.—O. : Water is continually falling on the earth in the form of rain, which is the purest form of natural water, containing only some dissolved gases, but on sinking into the earth and reappearing as spring water it often holds a large amount of matter in suspension, and sometimes is also heated much higher than the temperature of the air. The surplus from springs and drainage from the surface form rivers, and these flow into the sea. M.: It has

already been pointed out that whenever any compound containing hydrogen is burnt, one of the products is water. By accurate experiments it has been demonstrated that there are two parts of hydrogen to one part of oxygen in water. It can be produced by the direct combination of its elements, or by passing hydrogen over a hot metallic oxide such as the oxides of copper or iron. Eq.: $CuO + H_2 = Cu + H_2O$ P.: Water is a neutral liquid, neither acid nor alkali, and is the greatest solvent known; that is, it is unsurpassed in its power of liquefying or forming solutions with solid and gaseous bodies, but there is a wide difference in the amount of different substances taken up.

Solubility of Gases.—Thus the four gases given below all dissolve in water at 0° C., but 100 parts of water dissolve—

1·9	volumes of	hydrogen
4·1	,,	,, oxygen
179·7	,,	,, carbon dioxide
114,900·	,,	,, ammonia

The solubility of a gas is affected by the temperature and pressure; as a rule, the warmer the water the less it dissolves, but the greater the pressure the more gas will be in solution. So water can be freed from dissolved gases by boiling.

Solubility of Solids.—Solids also show a marked difference in amount taken up. As a rule more of a solid is dissolved on an increase of temperature.

Saturated Solutions.—When a given volume of water has dissolved as much as possible of a particular substance it is said to be saturated and forms a saturated solution of the substance. To separate a solid in solution the water requires to be boiled until it is given off in the form of steam, and by stopping this action and allowing the remainder to cool down a point can be reached with most substances in which the substance in solution combines with the water remaining to form a crystalline compound.

Water of Crystallisation.—Such combined water is called water of crystallisation. These combined compounds are formulated thus: $ZnSO_4 7H_2O$, showing, that zinc sulphate is crystallised with seven molecules of water. Crystalline salts can be decomposed by heat, and generally part with the larger portion of their water at about 100° C., but often hold the last molecule with great tenacity. Thus zinc sulphate parts with six molecules at 100° C., but requires 240° C., to drive off the last molecule; and to show this, the formula of the crystallised salt is written $ZnSO_4 H_2O + 6H_2O$.

Water of Constitution, or Water of Halhydration.—This final molecule is named constitutional or halhydrational water.

Action of Heat.—It is a general law that substances expand on being heated, and contract on being cooled, but water only partially obeys this law. If a volume of water at the temperature of 100° C., is gradually cooled, it contracts as it loses heat until it reaches 4° C., when it begins to expand again until it cools to 0° C., when it changes to ice with a sudden and violent expansion. It is this increase of bulk at the moment of solidifying that bursts water pipes, etc., in the winter; the crack is made at the moment of freezing, but the water, being solid, cannot show itself until it melts, hence the popular but erroneous opinion that the thaw causes the rupture. It is this expansion that causes ice to collect on the surface, and being a bad conductor of heat it protects the water under it, otherwise all our rivers and lakes would be frozen solid in a hard winter, and our climate would be arctic.

By cooling water in a closed vessel in a state of perfect rest, it is possible to reduce its temperature to—15° C. without its solidifying, but the slightest agitation will at once turn it to ice, and the temperature will rise to 0°. On heating water from 0° C. it will of course behave in the opposite manner—contract up to 4° C., and then expand to its boiling point, 100° C., under ordinary temperatures, when it forms steam with a very great expansion. Under pressure, as in a boiler, water can be heated far above the temperature of 100° C. without forming steam; but as the pressure becomes enormous, very great care, and a number of safeguards, such as safety valves, etc., are necessary. Water only boils at 100° C. under a pressure of 760mm.; if the pressure is only 733mm. it would boil at 99° C., and if the pressure was 787mm. the water must be heated to 101° C. A difference of 27mm. in atmospheric pressure causes a difference of 1° in the temperature at which water will boil. The temperature at which water boils is also influenced by its depth, and by the nature of the vessel in which it is heated, and other causes.

Latent Heat of Water.—All substances contain some amount of heat, which is necessary to keep them in the condition of gases or liquids, etc., and as this heat cannot be measured by a thermometer, it is said to be latent or hidden. If we mix a kilogram of water at 80° with a kilogram at 0° we get 2 kilograms at 40°; but if we mix a kilogram of water at 80° with a kilogram of ice at 0° we get 2 kilograms of water at 0°. The 80° have been used up, or have become latent in turning the ice to water; they are required to keep the water fluid.

Thermal Unit.—It has been agreed to take as a unit of heat that amount of heat which is required to raise 1 kilogram of water from 0° C. to 1° C. We have seen that it took 80 of these units to turn the ice into water, so the latent heat of fusion of water is said to be 80 thermal units. The latent heat of steam is 536 thermal units.

Purification of Water.—Water being such a good solvent nearly always contains something in solution and sometimes in suspension. The latter can be got rid of by filtration, such as allowing it to percolate through unsized paper (the kind known as Swedish filter paper is the best), or the water may be boiled and the steam condensed. Water treated in this way is said to be distilled and is tasteless, and, if pure, will be colourless and inodorous, and give no precipitate with the following reagents:—ammonium sulphide, lead acetate, ammonium oxalate, barium chloride, and silver nitrate.

Solubility of Salts in Water.—The following list gives the principal soluble and insoluble salts, with the exception of the sodium, potassium, and ammonium salts, which are all soluble.

Names of Salts.	Soluble in Water.	Insoluble in Water.	Remarks.
Carbonates	None	All	—
Sulphates ...	Most sulphates, excepting:	Ba Si, Cu and Pb, and some basic sulphates.	—
Chlorides ...	All, excepting:	Ag, Hg, Pb, Cu, Au, Pt...	$PbCl_2$ is sol. in hot water; the last three are slightly soluble.
Bromides ...	All ,, ...	Ag, Hg, Pb.	$PbBr_2$ slightly.
Iodides ...	All ,, ...	Ag, Hg, Pb, Cu, Bi, Au, Pt,	PbI_2 sol. in hot water.
Nitrates ...	All ,, ...	A few basic nitrates ...	—

Solubility of the Oxides.—The oxides of sodium and potassium readily dissolve in water, and the oxides of barium, strontium, calcium, and magnesium are slightly soluble. They all form alkaline solutions, which neutralize all acids. Eq.: $K_2O + 2HCl = 2KCl_2 + H_2O$.

The oxides of arsenic and chromium and all the non-metallic oxides dissolve, forming acid solutions; the other oxides are insoluble.

Action on Water of the Metals.—In the preparation of hydrogen, we have given the action of those metals that decompose water at the ordinary temperature or steam at a red heat. The following metals are without action on water at any temperature:—As, Sb, Pb, Cu, Ag, Hg, Bi, Au.

Hardness of Water.—Water is said to be "hard" when it

contains anything in solution that prevents the lathering of soap. The carbonates of lime and magnesia are insoluble in pure water, but dissolve in water containing carbon dioxide, forming bicarbonates. Eq.: $CaCO_3+CO_2=CaCO_3,CO_2$. In boiling such a water the bicarbonate is decomposed, the carbon dioxide being given off and the carbonate precipitated. It could also be thrown down by adding lime to the water, the action taking place as follows. Eq.: $CaCO_3CO_2+CaO=2CaCO_3$. Many processes for softening water on the large scale take advantage of this action. Sulphate of lime, etc., produce a hardness that cannot be removed by boiling, in which case the water is said to be "permanently hard." Those waters that are softened by boiling are said to have "temporary hardness."

Hydrogen Dioxide, *or Hydroxyl*, H_2O_2.—This substance, which can be considered as water combined with an extra atom of oxygen, can be prepared by several processes, of which the following are examples:—

(1) By adding moist barium dioxide to a cold solution of sulphuric acid, and filtering off the precipitate. Eq.: $BaO_2+H_2SO_4=BaSO_4+H_2O_2$.

(2) By adding barium dioxide to a cold solution of hydrochloric acid, and purifying the liquid by adding sulphuric acid, silver sulphate, and barium carbonate.

(3) By passing carbon dioxide into a mixture of barium dioxide and water, and filtering. Eq.: $BaO_2+H_2O+CO_2=BaCO_3+H_2O_2$. Any of these methods will give a weak solution of the hydroxyl, which can be concentrated *in vacuo* over strong sulphuric acid.

P.: When concentrated it has a strong bitter taste, whitens the tongue, bleaches the skin, and produces violent itching. Its S. G. is 1·45. It remains liquid at —30° C., slowly decomposes at the ordinary temperatures, and rapidly at 50° C. It readily parts with half its oxygen, and acts as a powerful oxidizing agent, and in some cases as a reducing agent. It liberates iodine from its metallic compounds, but is without action on chlorides and bromides. The strength of the commercial preparation is expressed in the number of volumes of oxygen it gives off on heating; the usual strength is ten volumes. U.: It is a convenient source of oxygen and as a bleaching agent. U. P.: A very dilute solution of this reagent is useful for decomposing the last traces of sulphites or hyposulphite of soda that may remain in photographic films after washing, the following reactions taking place: The sodium sulphite (Na_2SO_3) or hyposulphite ($Na_2S_2O_3$) being oxidised into the basic or acid sulphate of soda, which are quite harmless. Eq.: (1) $Na_2SO_3+H_2O_2=Na_2SO_4+H_2O$. (2) $Na_2S_2O_3+4H_2O_2=2NaHSO_4+3H_2O$. *Test.*—A solution of guaiacum and infusion of malt become blue in presence of even a trace of the dioxide.

How to Make a Set of Photographic Apparatus.

By H. J.

Chapter IV.

THE DOUBLE DARK SLIDE.

The subject of this chapter is, I think, the most important of the whole set of apparatus, and requires the most careful work of any, but although it is of such a nature that it may be said that it is not possible for any amateur to make it properly so as to answer the purpose, I say it is quite possible, as I have done it, and therefore others may be able to do it if they try; and the dark slides being very necessary as well as very expensive articles, I think that soon after this is printed there will be a few more who will say the same as I do.

There are several kinds of slides made, but the one that I am about to describe is the ordinary book form with folding shutter, as I do not think that these can be beaten for good practical use, though the fancy patents at fancy prices may perhaps be useful in relieving the pressure on some pockets as well as adding to others, so if no use for use, they serve their purpose in a way, and perhaps in some cases in the only way, they are intended to.

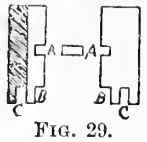


Fig. 29.

We will suppose that we are making three double slides for the cameras which I have described in my former papers; for these we shall require 17 ft. of grooving, or as it is usually reckoned in the double, 8½ ft. This can be bought ready made at eightpence per foot, but as it can be made cheaper, and is really not difficult to make if set about in the right way, I will show how to make it ourselves. It is best to make it in lengths long enough to cut one half of a slide, so that if there is any slight difference in the grooving it is not apparent, as we can use a length for each frame, and of course there will not be any difference in the grooves by so doing. Now to make the grooving we shall want a piece of one-inch mahogany 2 ft. 10 in. long, plane it both sides, and gauge it to a thickness; it must not be less than seven-eighths of an inch, and if it is a trifle more it will not matter so that it is the same throughout. Now square one edge, planing it straight at the same time; then along the edge, in the middle, run an eighth of an inch groove, one-eighth of an inch deep as well; then make a rabbet in one corner, an eighth of an inch *on the edge*, and barely an eighth deep (that is on the *side* of board); now turn the board down flat on bench with the above rabbet upwards, and run a sixteenth of an inch groove, leaving the same thickness between the rabbet and the groove. When this is done, the board will be as shown in fig. 30, and on marking on an eighth of an inch beyond the last groove and sawing it off, and gauging it down to a bare three-eighth inch in thickness, it will be of the section as shown in fig. 29, and this is what we want. Having made one piece it will be comparatively easy to make the others, therefore I will suppose the other five to be done, and will proceed with making the frames.



Fig. 30.

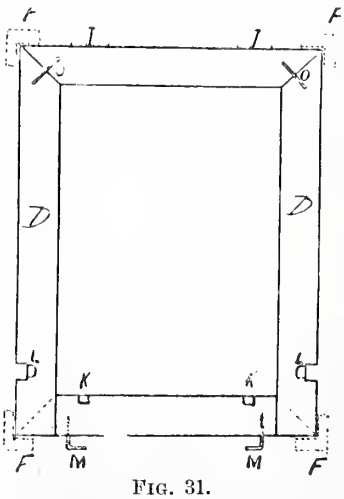


Fig. 31.

In order that the figures 29 and 30 may be better understood, I have lettered the grooves and rabbet, and it will be seen that the groove A is formed on the edge of board, and is for the reception of the small strip as shown, to prevent the light from entering between the frames when filled with plates. The rabbet B is formed on the corner, the widest part being on the edge of board; this rabbet is for the plates to rest in, one plate resting in each frame, with a division plate of metal or card

between. The groove C is formed on side of board, and is for the shutter to slide in when exposing the plate. I think that I have made this sufficiently clear, so the next thing is to make the small piece shown in fig. 29; this must be a bare quarter of an inch wide, and of the right thickness to fit somewhat easily in groove A. We shall only want three lengths of this, and when made, a length can be glued in the groove A of three of the lengths of grooving, leaving the other three as they are.

We will now see about making the frames. Place two lengths of the grooving together, one without the tongue and one with, so that the latter fits in the groove of the former; then place the two together in the mitre box, and cut off a length of 8½ in. The rabbet edges should be the shortest side of mitre (see fig. 32). Lay aside the length you have cut off, keeping the two pieces together, and cut the other piece so that the rabbet is at the shortest side of mitre still; then measure off a full 4½ in. from this short side, and cut this length off, reverse the mitre again as before, and cut off another length of 8½ in. (this is the length from longest point of mitre), and cut off square. Now cut the remaining piece, which will be about the right length, into another short length the same as before, 4½ in. full at the shortest or rabbeted side. The stuff is now cut off for one complete slide, and before cutting more off this should be numbered so that the same pieces can be brought together again in case they get mixed, which they are very likely to do during the remaining operations. The remaining grooving can now be cut up and numbered in the same way. Now take three of the shortest pieces, or, as they must be separated, I suppose I should say six, and plane away all outside the groove C. The shaded part in one piece of fig. 29 shows the part to be planed away in all six pieces; this is done to allow room for the shutter to slide.

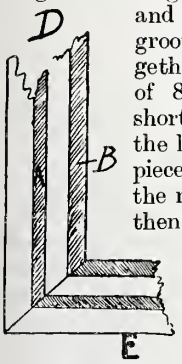


FIG. 32.

The mitres can now be shot on a shooting board, using a very sharp plane, and trying the first two that are shot to make sure that the board is true. If not, make it so, as then the whole lot will fit without any further trouble. All the short pieces must be brought to exactly the same length at the inside (the grooved edges), or the slides will not be alike. The square ends of the longest or side pieces must now be seen to. On these a mitre must be cut half way through from the inside. See fig. 32, D being the side piece; and fig. 33, which shows the edge of the same piece after the mitre is cut. All of the side pieces must be done in the same way, the distance between the short side of mitres being full 6¼ in., and great care must be taken to get them all exactly alike. Now make a kind of shallow box wide enough to hold the whole of the grooving when placed on its edge, with the exception of the end pieces which were planed down; this will be about 7 in., and the same length will be long enough. It will need no ends, but must have sides standing up an inch. One end of the sides must be cut to a mitre, and half way along the mitre make a saw cut at right angles with it going in about a quarter of an inch. Now place all the grooving in this box, with the mitred ends level with the mitred sides of box, and wedge it all tightly so that it cannot move; then with the same saw make a cut a quarter of an inch deep in each mitre. The cuts in box sides will serve as guides, and by doing them all at once in this way they will be all alike; the end pieces being mitred at both ends will require turning round and cutting again, but the sides will of course only want doing at one end. The frames can now be put together; to do this, take two of the side pieces without the tongue, and screw one of the thin end pieces into the mitres which are cut half way through. See fig 32, E being the end piece, and D the side piece. Now do the same with other two sides and end, this time using those with tongue inserted; then take two of the thick end pieces, one with tongue and one without, also get some pieces of veneer of the thickness to just go in the saw cut in mitres, and cut them 1½ in. long, and ½ in. wide; now lay down the frame with the tongue up, lay the other on it with the groove down so that they fit together, then place the two ends together and put them in their places, and slip a piece of veneer in each saw cut; this will hold them together temporarily while the other two slides are done in the same way. When this is done make a length of wood (deal will do) of the section shown by dotted lines at F, fig. 31, 18 in. long; cut this into twelve pieces. Now have the glue hot and take one slide apart, glue the mitres of the thin end piece and screw in position again, then glue the two mitres of the other end piece, also the two side pieces, and place together and glue a piece of veneer and place in each saw cut; do the corresponding half of the slide in the same way as quickly as possible, and lay on the first one, putting a block or two between to keep them apart, and slipping the saw cuts over the same pieces of veneer, so that the veneer holds the two frames together. Now place an angle piece at each corner as shown in fig. 31, F F F F, pass a string round the four pieces three or four times and tie the ends together; then insert a nail or piece of iron in one fold of the string and twist it up tightly; this will be found to draw the mitres together beautifully, and must be left until dry. All the frames must be done as above, packing the two apart in each case, so that when the glue is dry the veneer can be cut asunder between the frames; if they were glued up close together, this could not be done without damaging them. When the glue is dry, the strings and corner pieces can be taken off, the veneer cut, and the frames cleaned off with plane and glass paper, and then the shutters can be made. These are made of quarter-inch mahogany, but as they would curl and twist if cut out of the board and fitted as they are, it would not do, so to prevent this they must be clamped. Now to any one who has a small circular saw, this is an easy job, as they could make them all in one and cut up after; but as it is not very likely that many of my readers are so fortunate, I must cater for those who will have to do it by hand. For the three slides we want six shutters; each of these must be made up of three pieces as shown at G H G in figures 34 and 35, the grain of the two outside pieces G G running lengthways of the shutter, and H running crossways; thus it is practically impossible for them to warp or twist. Now prepare six pieces of quarter-inch mahogany 3¼ inches long

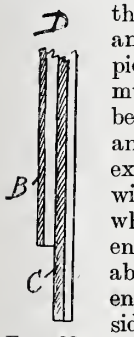


FIG. 33.

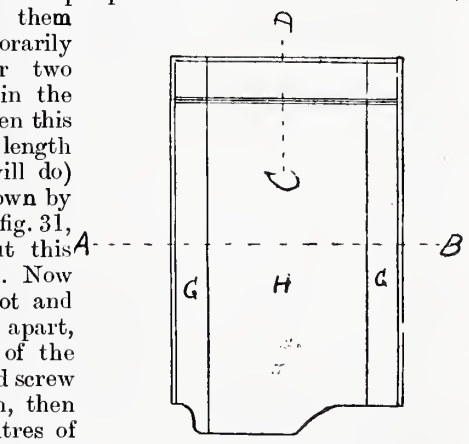


FIG. 34.

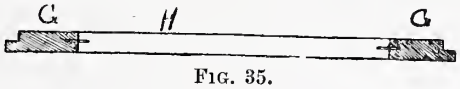


FIG. 35.

(the lengthways of the grain) by 9 in. wide, also twelve pieces 9 in. long by 1 in. wide. The 3¼ in. of the former is exact measurement, the others not so exact.

The narrow pieces must be jointed, one on each side of the larger pieces; and when good joints are made in all of them, run a fine saw-cut down each joint as near the middle as possible, and cut some pieces of veneer to form tongues to fit in these grooves. The whole will be clearly seen on referring to fig. 35, which is a section of shutter and shows the tongues in the joints. The whole can be put together, first glueing the veneer and inserting it in the centre piece, and then glueing the two edges and putting them together. Rub them to and fro so as to get out as much glue as possible; this will make a good joint which will never break. When the glue is set, plane one edge of shutter so that the narrow piece is parallel, and from these edges square across about an inch from one end, and cut them asunder, and then make a saw cut in each piece as before, and bevel into the cut from each side, but instead of putting in a piece of veneer, glue in a piece of parchment or other light-tight material to form a hinge to the shutter; this joint is much better than brass hinges, as well as being easier made.

Two joints can be made in shutter if it is preferred, so that it will fold round back of slide when drawn, but I prefer the single joint so that the shutter lies along side of camera or at the top if using the plate upright.

The shutters can now be planed off level on one side and fitted, and then while in the slides the other side can be planed off so that it is level all over; then a small bead can be run up each side where the shutter and frame of slide come together.

The frames of shutters can now be hinged together with small brass butts put on at the end (I I, fig. 31), and while the slide is held together small notches must be cut as shown at K K, fig. 31; these are for the stop of shutters, as will be seen a little further on.

Now prepare six pieces of mahogany about 5 in. long by 1 in. wide, and one-sixteenth inch thick. One of these pieces must be glued on each shutter at the end which projects from slide and forms the handle. To find the correct place the slide must be opened out flat so that the inside of shutters are upwards; and the shutters being held in as far as they will go with one hand, with the other glue the thin piece on the projecting part, keeping it close to end piece of slide; this gives a better handle to the shutter and also prevents light from entering slide between the shutter and frame. The shutters can now be cut to the shape shown, making them all alike, and then when they are placed in slide face to face the handles will not come opposite each other, as if they did it would be awkward to take hold of.

The slides must now be fitted to camera by ploughing out a groove in each edge of the right size to leave a tongue, which fits in the groove formed by brass strips on reversing back, and after they are fitted, a pair of clips can be fitted to each slide as shown, fitting them in beyond the tongues on edges; a small turnpin must also be inserted in each frame of slide, which will turn over the ends of shutters and prevents them opening at the wrong time. The slides are now finished except polishing, the instruction for which I have already given and therefore need not repeat them here.

The focussing frame must be made so that the rabbet which holds the glass is the same distance away from the face of it as the rabbet of dark-slide is where the plate rests, or if this is not attended to, your pictures will not be in focus. The frame will also be keyed together in the same way as the fram s of slides.

The following are the fittings required for three half-plate slides, with prices of same:—

	s.	d.
Three pairs clip hinges to hold slides together	1	0
Three pairs hinges (1 in. brass butts) ..	0	6
Six turnpins to hold shutters in	0	6

Screws included in above prices.

Study and Practice of Art in Field Photography.

By A. Horsley Hinton.

(*Continued from page* 456, *vol.* xv.)

IX.—ON THE TREATMENT OF DISTANCES IN LANDSCAPE.

Of those things which are popularly supposed to be beyond the possibility of photography to render truthfully there is, perhaps, nothing which is such a frequent source of regret and disappointment than those objects, or that part of the scene, which, being more or less remote from the point of view, are included in the comprehensive term *distance*. In how many instances the distance is the most charming feature in the landscape, and yet when seen on the camera screen this same distance is found to have dwindled away to insignificance, and the picture is abandoned with a feeling akin to dispair.

This is, perhaps, the more keenly and oftener felt in pastoral and flat country where the distance does not consist of any very striking or prominent objects such as mountain peaks or rugged chains of hills.

Groups of trees and masses of foliage and lesser hill slopes, softly blended one behind another, with here and there a solitary or detached tree rising a little higher than the rest against the sky, may form a very pleasing boundary and termination to the receding planes of the level meadowland, either on account of the form which it assumes or for the constantly varying purples and greys which it takes from the changing light and shadow of the sky overhead. It does not occupy very much space, it is not in its elevation a very large thing, it comprises nothing bold or great, or striking, but it may be enough to complete, or even to make the picture, and to be quite essential to it; and yet in the camera it somehow diminishes down to a mere blue line, and you feel its loss in your picture at once. In consequence of this, such subjects are very often shunned and are regarded as outside the limitations of successful photography.

We believe most of our readers who have done any considerable amount of out-door photography will recognise the trouble we have indicated, and have either never inquired into the cause, or else without much consideration have put it down to one of the inherent errors of the lens.

Now, it may not be unprofitable if we endeavour to ascertain whether the error is not more apparent than real—if, indeed, error there be—and also to inquire why we feel the incapacity of the instrument to reproduce distance, and further, if possible, to create a happier and more contented frame of mind with regard to this particular phase of landscape work.

In the first place it seems to be popularly believed, by some at least, that the short-focus or wide-angle lens magnifies the foreground in proportion to the rest of the scene, and diminishes the distance—or, in other words, *exaggerates the perspective* of a scene—and that a lens of longer focus and narrower angle, of the so-called "rapid rectilinear" or "single view" type, possesses the power of rendering

distant objects larger, and therefore to the eye more naturally in proportion to the rest of the landscape. The fallacy of this belief may be seen from a simple experiment.

From a given position make two negatives, first with a "wide-angle" lens of, say, 4½ in. focus, and secondly, with a "rapid rectilinear" lens of something like double the focal length of the former. In the *first* we shall have a result something like the accompanying sketch No. 1, in which the distance is so small as to lose all value, and the grasses and other foreground objects look gigantic and unnatural. In the second we shall find our lens has included a much more limited view, with a result something like our sketch No. 2; and were the two plates not closely compared, or if the negatives be of different scenes, and just comparison therefore difficult, the concluding impression might be that our short-focus lens has a way of diminishing the distance and enlarging the foreground in a manner anything but conducive to the production of a pleasing picture.

We have supposed two plates to have been made from the same spot, but in the *first* instance a lens of short focus was employed, that is to say, a lens which admitted of our plate being much nearer to the aperture in front, through which aperture the view is received, and hence we included a great deal more of the landscape, and as an inevitable



consequence that part of the scene which alone is included on the *second* plate is represented on the *first* on a much *smaller scale*. The *relative* proportions of each part of No. 2 are accurately preserved in No. 1, but each and all are smaller. This might be shown by cutting out from No. 1 just that part of the view included on No. 2, and enlarging it up to the same size, when we should find the proportion of foreground to distance is the same. But besides producing the same distance on a smaller scale, and including a great deal more of it, from left to right, our short-focus lens will have introduced also a much larger area. Vertically, a great deal more sky, which is not so objectionable, and also a great deal of foreground, which is probably the chief cause of its offence and apparent error. On the same plate on which we have our distance, etc., represented on a very reduced scale, we shall also have the ground almost to our very feet, so that a single tuft of grass or herbage may be as large as hundreds of acres of forest and meadow land. Relatively to *the whole scene* included on the plate, the distance is necessarily much smaller, and *not to the individual objects*. Hence the further the aperture be from the plate—that is, the greater the focal length of the lens—the smaller landscape area will be included, and therefore the larger will be the distant objects in proportion to the whole. For instance, standing in the valley some mile or so from the foot of a great mountain, it would seem to the eye, as you look at it normally, that the huge peak occupies, vertically, about a third of the entire scene, and yet on your 10 by 8 negative made from this same spot you find the mountain only measures about 1½ inches in height. Now cut your 10 by 8 print down to about 5 by 4½, and if your visual and mental impression as to the mountain occupying a third of the height of the scene be correct, the reduced print should be a satisfactory rendering of the view, and if it be essential or desirable to employ the whole surface of the 10 by 8 plate then you must use a lens of such length of focus that it will only include just that subject matter contained in the print cut down to 5 by 4½.

We have already said far more than we would desire upon the physical or optical side of the question, because for all such matters we must refer our readers to those writings which are expressly concerned with the technology of the apparatus we employ, but from the foregoing it will be seen that so far as the scientific accuracy of our rendering of distance is concerned, it resolves itself into a question of length of focus or the inclusion and exclusion of matter the presence of which disturbs the impression of relative proportions. But beyond the mere scientific accuracy, there is another factor in our rendering of distance which must be taken into account, but which is not easily dealt with, and that is that whilst looking at the mountain already instanced our mind is largely occupied with a sense of its loftiness, its magnificence, its overwhelming greatness, so that the impression left in our minds would probably far from coincide with the scene if mirrored in a looking-glass.

In the same manner, when crossing a level country, the eye may be delighted with the blue distance seen beyond the furthest hedgerow; amidst all the wonderful gradations of grey and blue, we trace the winding course of a far-off stream, bright like a silken thread through level marshes, and between dark tree clusters, small points of red and white, not very clear or distinct, are cottages and farm buildings, which fringe a smooth grass field, and nearly lost at times in the shadow of tall trees which grow dark and purple under a drifting cloud shadow, each hedge-divided field varies in tint, yellow, brown, and green, yet all suffused with a delightful atmospheric blue which robs everything of positive colour, and gradually envelops the still more distant regions in a mystery which the eye cannot penetrate. All this the mind loves to contemplate, and the eye is fascinated with; the admiration for this glimpse of distance overpowers for a time the attractions of the rest of the scene, and yet if we descend to plain measurements and facts we may find the depth of all this distance taken from the utmost horizon line to where the nearer landscape cuts it off is no greater, not perhaps so great, as the depth of yonder hedge of white thorn and bramble which separates us from the next field, and which we shall surmount by the easiest of wooden stiles. That part of the scene which the mind loves to dwell upon, the senses exalt to the suppression or diminution of the rest; and this power of exalting the painter artist possesses to a far greater extent than the photographer, if, indeed, the latter possess it at all. The painter in his portrait may draw the eye or the head, and in his landscape the mountain, slightly larger than it really is, and thus give additional importance to those particulars which the mind thinks larger than the eye sees them. How far the photographer's inability to do this is compensated for by the facility and rapidity of drawing which is so peculiarly his own, it is not our purpose to discuss here, but this part of our subject leads us to inquire whether after all many of our disappointments in pictures

of distances do not arise quite as much from a *lack of knowledge* of what is most beautiful and worth reproducing in Nature's distances, as from an inability to draw it as we wish, quite as much from our not having learned to *appreciate* that which *is* within our power as from any limitation, more or less imaginary, which we have accustomed ourselves to accept as among photography's failings.

An insufficient cultivation of the perceptions has stood in the way of artistic advancement amongst photographers all along, and it is perhaps nowhere more evident than in the treatment of landscape subjects in which a very distant scene is possible.

We submit that the distance which is pictorially desirable is not that far-reaching prospect which folks climb high hills or ascend into lofty campaniles to view. Spread out map-like beneath one, it excites admiration, but the strongest emotion awakened is a wonderment at the extent of the prospect, and what pleasurable sensations we may have owe their origin to astonishment rather than to the æsthetic. Neither is the whole or even the chief beauty of distance inseparable from the piling up of vast hill masses and mountain peaks towering skywards behind each other, so characteristic of some of the most popular picturesque districts of this and other countries.

The most powerful operation of distance in landscape is



the feeling of boundlessness which it creates; imagination escapes through the gap in the hedge to wander "across the *far* blue hills," not because of the hills themselves, nor on account of their colour or other particular, but because of their "far-offness." It is the feeling of freedom, the inducement to let fancy get away from those things which it sees clearly and understands, into the far-off distance where objects are only suggested and but half revealed; then there is a very sweetness where the sky meets the earth in a faint horizon line. All this will essentially be best observed and best felt in the flat open country where mile after mile, land, water, or varied vegetation, as the case may be, stretches away with little or nothing to interrupt our gaze, and yet to the average man who has never given the matter consideration the idea of any beauty in a distant prospect in a flat country would be received as almost ridiculous, and probably even the serious student will at first fail to wholly comprehend it. This is so chiefly because the untrained eye and taste seek for something striking and attractive which shall immediately appeal to and at once impress the senses.

Experience, however, teaches us that immediate impressions are less enduring in their power to please than those which arise after longer study and contemplation. Hence it will be found that the more we give attention to, and the more often we carefully notice, the comparatively quiet, unassuming distance which is found in flat country, the greater will be the charm discovered therein, and the more will be found to excite admiration, even emotion. We have for our own part found it to be one of those ultimate and subtle impressions, the fascination of which never seems to grow less, and the more the taste is cultivated to appreciate, and the eye to observe these less pronounced, less revealed beauties, not only does our affection for them become stronger, but as there is less material to grow accustomed to, so there is little danger of our becoming wearied or troubled with a feeling of monotony.

Our purpose in thus writing at some length upon a matter which many will assert is after all largely a matter of individual taste, is because we would have our readers dispel the notion that it is essential that the distance to be satisfactory should comprise certain well-marked objects, or that a picture is unsatisfactory because much that is interesting is too remote and therefore too small.

Above all things remember that the chief and all-important thing about our distance is not its form or outline, or particular character, but that when reproduced in one photograph it should at once give the impression of *being distant* or far off. Remember that the idea of distance is not necessarily conveyed merely by objects being small, and smaller, gradually diminishing into invisibility. The landscape, as it approaches the horizon, looks increasingly distant because of the *atmosphere* which intervenes, an impalpable vaporous veil varying in all seasons and all climates, pervading everything; at nearest transparent, almost imperceptible, but the further the object the thicker the atmospheric medium which the eye must penetrate, thus imparting to romote objects the greyness or the blue and purple which makes the distance so charming in colour and contrast, and of such softness and delicacy. If we render distance in our pictures without the most scrupulous regard for this important characteristic of distance, our best success in other respects will be worthless, and the effect untruthful.

In plain geometrical figures, such as houses and buildings, their perspective may be indicated by the arrangement of the component lines and parts, and to some extent this is done with such objects as hedges and roadways, which more or less tend towards rectilinear forms, but in an average landscape numberless objects are comprised, varying in nature, size, and figure, so that to express recedence or distance by drawing, that is by lines only, would be as unsatisfactory as incomplete; but in addition to this lineal perspective we have that aerial perspective, or the expression of relative distances by the suggestion of atmosphere, to which we have already referred, and upon this the right and truthful representation of nature mainly, and perhaps before anything, depends.

From the foregoing we would have our readers learn that after all, perhaps, the principal thing which makes distant objects desirable for our picture-making is the opportunity which is thereby afforded for the rendering of the atmosphere, under the influence of which each plane of the landscape gradually fades into indistinctness. Nowhere have we such opportunities of studying these effects as in a more or less flat and open country where the view is uninterrupted and unrestricted, and we have endeavoured to introduce a new purpose to our readers in the selection of picture subjects, namely, that the aim be not only the representation of pleasing forms and picturesque objects, but in selecting the scene we should be always careful to watch for those conditions of nature which give adequate opportunity for the representation of atmosphere, and with this object in view an interest and a beauty will often be discovered in a scene otherwise unsuspected of picturesque possibilities.

The presence of visible atmosphere being admitted as desirable in most cases for artistic effect, it follows that

those phenomenally clear days when the distance appears hard and sharp, and so distinct that it seems as it were to contradict itself by coming quite near to us, are just those conditions which, as a general rule, are undesirable for artistic photographic work, as is also the fierce and hard light of summer noon, which robs the scene of the idea of atmosphere and of "tone."

A flat, marshy tract of country passing by soft gradations from the clearness of the foreground through the remoter regions into the haziness of the far-off horizon, may, although comprising no very striking or important feature, form a better picture, and produce, upon the cultivated mind at least, a more enduring impression than the grandest and wildest landscape under less favourable conditions.

The study of "aerial perspective" and "tone" are inseparable, if, indeed, the two are not synonymous, and we shall take the opportunity of our next chapter of briefly referring to the subject of "Tone" before passing to other matters.

(*To be continued.*)

The Theory of Development.*

(*Continued from page* 126.)

VII.—REPLY TO THE FOREGOING.

By Henry E. Armstrong.

Whatever value my arguments may ultimately be found to possess, the discussion to which they have given rise clearly shows that it was highly desirable to co-ordinate the facts, and challenge an expression of opinion, and the objections which are raised to my mode of viewing photographic phenomena afford a most interesting indication of current opinion on such matters.

Mr. Elder thinks that little if anything is to be gained by regarding the changes attending the development of a photographic picture from an electrical point of view; Mr. Bothamley is in a state of indecision whether to accept an electrolytic theory of development or not; and Captain Abney apparently throws cold water on my attempt to draw a parallel between the De la Rue cell and a photographic picture in course of development.

It is very remarkable that, although nearly sixty years have elapsed, we have not yet learnt to appreciate Faraday's teaching, that chemical changes are essentially electrolytic phenomena, so clearly expressed in the following passages in his VIIth and VIIIth series of "Experimental Researches":—

"Those bodies which, being interposed between the metals of the voltaic pile, render it active, *are all of them electrolytes*, and it cannot but press upon the attention of everyone engaged in considering this subject, that in those bodies (so essential to the pile) decomposition and the transmission of a current are so intimately connected that one cannot happen without the other. If, then, a voltaic trough have its extremities connected by a body capable of being decomposed, as water, we shall have a continuous current through the apparatus; and whilst it remains in this state we may look at the part where the acid is acting upon the plates, and that where the current is acting upon the water, as the reciprocals of each other. In both parts we have the two conditions, *inseparable in such bodies as these*, namely, the passing of a current and decomposition; *and this is as true of the cells in the battery as of the water-cell*, for no voltaic battery has as yet been constructed in which the chemical action is only that of combination: *decomposition is always included*, and is, I believe, an essential chemical part.

"But the difference in the two parts of the connected battery —that is, the decomposition or experimental cell and the acting cells—is simply this: in the former we urge the current through, but it, apparently of necessity, is accompanied by decomposition; in the latter we cause decomposition by ordinary chemical actions *(which are, however, themselves electrical)*, and, as a consequence, have the electrical current; and as the decomposition dependent upon the current is definite in the former case, so is the current associated with the decomposition also definite in the latter.

"All the facts show us that that power commonly called chemical affinity can be communicated to a distance through the metals and certain forms of carbon; that the electric current is only another form of the forces of chemical affinity; that its power is in proportion to the chemical affinities producing it; that when it is deficient in force it may be helped by calling in chemical aid, the want in the former being made up by an equivalent of the latter; that, in other words, *the forces termed chemical affinity and electricity are one and the same.*"

There is, however, no real difference between Captain Abney and myself; he prefers to take the zinc-copper couple as his model, but this is only another form of voltaic cell. In the case of the zinc-copper couple, no action can take place independently of the electrolyte or electrolytes in which the metals are immersed, and so in like manner no action would or could take place under ordinary conditions between bromide of silver altered by light, and the contiguous unaltered bromide, to which Captain Abney refers, until after the advent of the developer.

I am afraid that Mr. Bothamley has not appreciated my meaning. No experiments made by Hurter and Driffield with which I am acquainted can be held to disprove the "electrolytic theory," and possessing as we do the records of innumerable experiments showing that electrolytic action invariably attends chemical change—that, indeed, the two are inseparable—no new experiments are required. The task before us is to decipher and interpret, and, unless we set aside Faraday's conclusions, there is no escape for us—we simply cannot avoid interpreting the facts in the light of an electrolytic theory.

Mr. Elder is clearly not a chemist, or he would not object to my attempting to decipher the mechanism of chemical interchanges, and there is not the least doubt that he and I consider the phenomena from entirely different points of view. As a chemist I cannot rest satisfied with an algebraic equation, but must endeavour to ascertain its inner meaning, and to trace to its origin each one of its terms. I can even justify my application of Ohm's law by reference to authority—that of Ayrton and Perry, in whose paper on the "Contact Theory of Voltaic Action" (*Roy. Soc. Proceedings*, 1878), it is stated that, "to connect the two ideas (of chemical affinity and the amount of chemical action) we have a third, viz., resistance, and the electrical law of Ohm becomes the chemical law—the quantity of chemical action in unit time equals the sum of a great number of terms, each of which is an electromotive force divided by a resistance."

With reference to the action of ammonia, I do not consider that it is different in nature from that of the fixed alkalis because silver haloids are soluble in it, but that, besides acting as an alkali, it has also an effect in consequence of its power of dissolving silver haloids. Mr. Bothamley forgets that in a gelatine plate the silver haloid particles are enclosed as it were in colloid bags, and that it is not to be expected that these would allow the silver compound to pass outwards. Development, however, takes place within these colloid bags, which, if they contain ammonia, must also contain a solution of the silver haloid in ammonia.

Both Captain Abney and Mr. Elder challenge my reference to the action of light as *electrolytic*. The fact that a silver haloid *per se* is unaffected by light—that it is not shaken to pieces as it were on simple exposure—and that action takes place only when a *sensitiser* is associated with it, appears to me to entirely justify my expression that "the action of light on silver haloids is strictly comparable with that of an electric current." I should, however, like to hear more from Captain Abney regarding the "more simple explanation which is given by considering it as a problem in molecular physics."

With reference to my *suggestion* that *perhaps* there are two distinct latent images, I am free to confess that this is a purely hypothetical inference. That an *oxy-haloid* image is formed it is hardly possible any longer to doubt, but it appears to me probable that a silver image should also result, in consequence of a change taking place similar to that which a silver haloid undergoes when electrolysed, especially as it is known that silver is formed when silver haloids are exposed to light in contact with reducible organic matters. As to the properties of silver oxy-haloids, no doubt we have everything to learn.

Regarding reversal, nothing more can be usefully said at present; the recorded facts require to be most carefully con-

* From the *Camera Club Journal*.

sidered, and there is much need of further experimental enquiry on the subject.

There is not much, I think, in Mr. Bothamley's interesting addendum, which came under my notice after the above remarks were sent to press, requiring further special comment. I did not refer to his remarks with reference to the rendering of minute detail, as I did not wish to enter on a new subject; I will only say now that, in my opinion, such a circumstance affords no direct argument for or against an electrolytic theory. I hope to deal with the question on another occasion.

If Mr. Bothamley did not forget that the silver haloid was wrapped up in gelatine, he certainly did not fully realise the effect it would have. He now speaks of gelatine as a readily permeable celloid, and says that, if dissolved at all, the silver bromide would pass through the gelatine. I doubt this, as it appears to me probable that, as in a number of cases studied by Graham, the colloid septum would condition the decomposition of the soluble ammonia silver compound, and that, therefore, the silver bromide would not diffuse into the solution. My reference to the different effect of ammonia, I may add, was made almost entirely with the object of accounting for the tendency of the pyro-ammonia developer to produce a peculiar fog; I did not argue that as an alkali it differed markedly from other alkalis.

How to Look at Photographs.*

BY FRANK M. SUTCLIFFE.

PHOTOGRAPHS are generally said to show either technical or artistic excellence. Sometimes both qualities are visible in the same piece of work, sometimes they are not. There is another quality which ought to be present in all photographs, without which no photograph can be considered perfect; and, until this quality has been recognised, the photographer should stop before he pats himself on the back and says, "What a good boy I am," after he has taken what he may look upon as a perfect piece of work, as an example of technical skill, or as an attempt at picture-making. It may be clever, yet for all that it is a failure if it cannot *speak* to those who look at it.

There has been, as you all know, a lot of strife between what has been called the old school, and the new, or the sharp and the unsharpened; it seems to me that, if both these parties had looked at their work and at that of others in the right way, all this bickering would not have been. It would almost appear as if many consider their photographs as an end rather than a means to an end, and as if all that is expected of the spectator is that he should admire the skill of the worker as shown in his work; sometimes even it appears to be the *author* of the work who expects to be admired. Only the other day this was strongly impressed upon me. A youthful photographer was pointing out the beauties of what he considered a most successful picture, which he had just finished, to one of our oldest photographers, saying how he had been advised to place a figure at such a spot, but did not, because and because— Seeing the old photographer smile, he stopped in his oration, and, I hope, received a useful lesson when the old one said: "Pardon me for smiling, but I was thinking of a whipping I once got for falling into a horse-trough the very image of the one you have there." That old photographer knew how to look at photographs, for he was able to make them speak to him and recall to his mind bygone days. The person who looks at a photograph as a complete picture, unable to say anything about anything except the facts which existed at the moment of exposure, does not see very far. You may contend that, if this is true, it will depend more upon the spectator than upon the photograph, for what will give pleasure to one will say nothing to another. To be sure, if the spectator is blind to everything except the mechanical part of the work, the loss is his alone; but he need not, as he often does, call attention to his own ignorance by denouncing a picture a failure because his mind happens to be blank except so far as a knowledge of a certain kind of mechanics may go.

If a photographer thinks he can tell his tales better by making his works microscopically sharp, let him do so by all means; if any one's hobby is the study of mosses and fungi, no pinhole or spectacle-lens view will remind such an one of the happy days he has spent in poring over damp walls in musty nooks and corners. To some an extremely sharp picture may be positively painful, for it will perhaps disturb and break the chain of thought, whereas a less-defined one would allow the mind to wander at its own sweet will. At the last exhibition of the Photographic Society, the hanging committee, the Secretary, and the judges had the opportunity of studying a few works which the rest of the world were not allowed to see. I don't allude to those which were hung on the floor, and afterwards consigned to the cellars, but to a small collection of pictures by the worthy President of this Convention. Among them was an almost ideal photograph. I don't mean that it was so uncertain and undefined that it could have represented anything the spectator might have been pleased to wish, but it was just enough to start the mind along a pleasant channel. The foreground did nothing more than carry the eye to the principal object, and when it got it there the eye was politely asked to take a seat, and the mind then began to entertain the spectator, and picture after picture were put before him; one heard the wind blowing and whistling through the mill sails, then it almost died away, only to come again in louder and louder gusts. Now the miller and his man come out and look anxiously, first at the yellow sky, and then at the wands, from which they take in nearly all sail. Yet the big arms rush round at a fearful rate as the sky gets darker and darker; what an enormous size the mill looks—did you ever go underneath a mill's sails in the dark? What terrible things the arms are—they are more like a nightmare than anything real, as they come down threatening to crush you at every turn, yet never getting any nearer. Then, perhaps, you awake from your dreams, only to find yourself inside the mill on a bright summer's morning, where the snowy whiteness is but little less dazzling than the sunshine outside. You notice how spotlessly clean the floors are polished by an unending stream of golden grain; your nostrils drink in, with infinite delight, the scent of newly ground wheat. Perhaps the miller weighs you in the big, old-fashioned floury scales, in which have been weighed, in good years and bad, the daily bread of the whole village. All this, and much more, did Mr. Davison's simple photograph say. Had it been taken by one of the cast-iron school, the same pleasant train of thought might have followed, if (mark the "if," if you please) one could only have kept at a distance of ten yards; but where is the man who is content to look at a photograph from this distance? No, it would have drawn us nearer and nearer, and every step would have disturbed the train of thought by forcing other subjects forward. Most likely the excellence of the lens would have been impressed upon us, and, once started on such a subject as cameras and lenses, good-bye to all pleasure.

You may think a windfall is a very suggestive subject—almost alive, as it were—and that it is only natural that it should have a story to tell. Very well, then, take photographic portraiture, or likeness-taking, as it used to be called. Which are the successful portraits? Those which are most beautifully posed, most brilliantly lighted, and most elegantly retouched? Not a bit of it. The best portraits are those which remind us in the happiest way of the originals. Those sitters who go to be took only to please themselves are invariably disappointed, and "serve 'em right;" for who, in their senses, wishes to be reminded of themselves? Or take views or a change. Why do people buy local views? Are they allured into spending their money because they are offered such exquisite examples of photographic art? No; all the tourist wants is something to remind him of the places he visits, something to strike a note in his memory. A few years ago I took a view, but somehow or other it did not sell at all, though it was as clear as the most fastidious could wish for. No; the view which sold was taken by the other man, though he ought to have been ashamed of it, for the grass was black, and his whites were white without any mistake. But his prints sold; do you know why? At one corner of his view was a white-washed public-house. I learned afterwards that visitors called there to refresh. My view did not include that ugly public-house. What I gained in artistic excellence I missed in sentiment and £ s. d.

There is another class of work which should certainly be able to speak. I mean subject or *genre* pictures; but these sometimes fail to appeal to anything but the spectator's sense of humour, so narrow is the line which divides the sublime from the ridiculous.

Turn to whatever branch of photography we will, it is hard to find one that does not provide ground for our airy palaces. You have all heard of the man who had been so badly brought up that

> "The yellow primrose by the river's brim
> A yellow primrose 'twas to him,
> And nothing more."

Somewhere on the walls of this room you will find a photograph of some animals—sheep and lambs. Now, this little photograph will most likely say to you what the yellow primrose ought to have said to the unfortunate man. It will remind you of the days when you were young and innocent as the lambs; it will remind you of successive spring-times, of the birth of many happy years. Young lambs always remind me of a photographer I knew when a boy. He was always singing—

> "If I'd as much money as I could tell,
> I wouldn't go crying, 'young lambs to sell!'"

* Taken as read at the Photographic Convention.

He had, like many of us, mistaken his vocation, and was consequently miserable.

If possible, whenever you look at a photograph, try to forget the photography. An architectural photograph will preach no end of sermons in stone to one who is well versed in the history of architecture, but to one who knows nothing of this art it will only tell of small stops, wide angles, and the like; it will supply him with less mental food than the view of the lambs would to a man who had never known the country, to whom sheep and lambs only meant mutton chops and lamb and mint sauce.

No doubt you are thinking, Who do you expect has time nowadays for all this dreaming? and will be saying that you want your pictures ready made without being at the trouble of making them for yourselves. If these are your thoughts, I am afraid you find the world a very hard place, for, if you take away the "make-believe" with which life is coloured, you must make existence almost unendurable.

Those among you who are unable to agree with what I have said will, I think, at least admit that it is better to take your photograph first, and then build your ideal on it, than to raise your ideal and then expect to be able to take a photograph to come up to it. I will, if you will allow me, give you an example. A customer of mine wanted his shop-front taken. By the way, shop-fronts are about the only things the amateur has left for us poor professionals to take. Well, I took the shop-front, but it failed to please. Why? Because my customer expected the photograph to rise as high as his imagination did. When I asked him to point out the faults, he said that, in the first place, the young lady looking out of the window was too short and fat, not tall and graceful, as she should have been. Secondly, a wax figure he expected next week for the window did not show in the photograph; but his principal objection was that a gilded sky-sign, which he intended having put up next winter, was not in my picture.

May I say that a photograph gives us the naked truth, which has to be clothed by the imagination.

Harmonising Harsh Negatives.*

Probably the most scathing and unanswerable criticism upon pictorial photography is that our prints are too black and white, too violent in contrast, that when viewed at arm's length they appear to be masses of black and white without relief in the shadow, or gradation in what should be the lighter half-tone; or if both are to some extent secured, the general effect is poor and flat. This criticism, though not applicable to the pictures produced by our better workers, is, unfortunately, too true when applied to the prints made by the majority of our rank and file, among whom I may claim to have a place.

The cause is not far to seek. A moment's reflection will serve to show that no process can reproduce nature's black, the total absence of light, as in the case where our darkest shadow is, some spot where light cannot penetrate, nor can it reproduce nature's highest light—light itself, or light reflected from water or other bright surface. Our deepest black and whitest paper fall far short of these extremes, and even if it were possible to secure in a negative the full scale of light and shade as seen in nature, it is certain that no printing process on paper can give the gradation found in a strong negative.

If we expose a plate rich in silver, and preferably isochromatic, on some well-lit subject, showing deep shadow in the foreground and having strongly defined clouds in the sky, and develop in the ordinary manner, we shall have a negative in which the shadows are nearly clear glass, and the cloud forms, though extremely dense, will yet be clearly perceptible. On making a print we shall find that long before the faint shadow markings in the clouds are impressed upon the paper, possibly even before the distant portions of the landscape are visible, the darker half-tone will be one mass of black. Our printing process is only capable of rendering one end of the long scale of light and shade in the negative. Some compromise must be attempted. Artists have their own methods of overcoming the difficulty and vary them to suit their subjects. In some cases they may use up the longer portion of the scale at their command in translating the lighter half-tone, and compress the shadows into the remaining portion. In another case they may employ the opposite method, the shadows and darker half-tone may be fully rendered, and the lights compressed. In a third case the whole scale may be uniformly compressed within the limits of the medium of expression; but the favourite method appears to be to introduce two or more scales into the composition, with the result that while the lighter half-tone may be much darker than in nature, yet the local contrasts being preserved, the painting or drawing conveys to the eye much the same impression it would receive from the scene in nature.

It is for us to consider to what extent we can make use of these methods in photography.

When we mask the landscape portion of a negative to allow the clouds to print out, or when we combine in the prints clouds from another negative, we are introducing two scales of light and shade into our composition. Masking and double printing or sunning down parts of the print are the readiest methods of obtaining harmony in what would otherwise be harsh prints. But when the lights and shades are intimately mingled, masking is difficult, and sometimes practically impossible, and the results of sunning down are sometimes far from pleasing.

If now we attempt in making the negative to compress the full scale of lights and shadows within the limits of our printing process (and this is quite possible by the method recommended by Captain Abney, *i.e.*, by developing first with full quantity of ammonia and just a trace of pyro, and continuing the development of the ghost image so obtained with full quantity of pyro and little ammonia), we are met with another difficulty—that of flatness—and there I would like to quote from an article in the *Photographic Quarterly* for April in this year, entitled, "Nature's Light Scales as Rendered by Photography," by Mr. H. Dennis Taylor. Mr. Taylor says, pages 180, 181, and 182:—

"....the eye's appreciation of rather high contrasts and great variations in them is clumsy and discriminating; extreme contrasts from 1 to 10, or, better still, 1 to 20, in a photographic print yielding to the eye much the same sort of impression as extreme contrasts of 1 to 50, or more, in nature would yield, especially when the print is not directly compared to the original scene. But it was also shown that although to the eye one high contrast is much the same as another high contrast, nevertheless the eye is extremely sensitive relatively to variations in those moderate contrasts which exist between contiguous features and details of natural view, and which give them their distinctness and relief.

"Hence it follows that, while such extreme contrasts as 1 to 15 or 20, which are available in a photographic print, will do very good service for giving an idea of very much higher contrasts existing in nature, still those moderate and delicate contrasts existing between the essential details of the natural view cannot be lowered in value (by that compression of the light scale which is necessary and unavoidable in the print) without the eye being at once struck by the divergence from reality, and being disappointed by a flatness and want of vigour which does not do justice to the original." And again, as a still more telling illustration or proof of the above statement, let a long series of small rectangular spaces be imagined in immediate contact, each being exactly $1\frac{1}{50}$ (or 2 per cent.) brighter than its neighbour on the left. If there are 325 of these strips, the photometric contrast between the darkest on the extreme left, and the brightest on the extreme right, will be as 1 to 100. Now a difference of 2 per cent. in brightness between two strips in immediate contact is easily perceptible to ordinary eyes, therefore all the strips would be clearly distinguishable from one another, and would constitute the *details* of the series. Now let a photograph of the series be produced in such a manner that the contrasts between the two extreme strips is reduced from 1 to 100 down to 1 to 5 (a trifle over). The light scale is then very strongly compressed, and it then follows that the contrast between any two contiguous strips will now be reduced to 1-200th, or a difference of one half per cent., instead of 2 per cent. as before. Now it has been proved by careful experiments with the experimental top, that such a small contrast as this is absolutely imperceptible to ordinary eyes. Therefore it follows that the rectangular strips will *no longer be discernible*, and that the whole effect would be that of a gradual and unbroken shading from one extreme of the series to the other. In other words, the details of the original have been altogether obliterated by the compression of the light scale, although a passable degree of contrast between the extremes is still preserved. The pith of the matter may be summed up thus:—While photography enables one to compress a very extensive natural light scale into the much narrower limits at the command of the printer, still it

* Read before the North Middlesex Photographic Society, by J. McIntosh.

performs the operation in a strictly mechanical and accurate way by modifying all contrasts, great and small, according to photometric laws; whereas human vision does *not* estimate or appreciate natural and artificial contrasts in a manner directly related to their photometric values, but is far more sensitive to modifications in the smaller contrasts than it is to modifications in the greater contrasts."

(*To be continued.*)

PHOTOGRAPHY AT THE BRITISH ASSOCIATION.

THE grants of money that were voted at the last meeting of the General Committee included one of £10 for photographs of meteorological phenomena, and one of £10 for photographs of geological interest.

PHOTOGRAPHY AS AN AID TO THE SURVEYOR.

In the Geographical Section, Colonel Tanner introduced this subject. He stated that it was a question that of late had received some attention, and he gave the results of a series of experiments he had been carrying out.

Rectilinear lenses as now made are capable of yielding the natural features of a landscape without any appreciable distortion, and, taking advantage of this, Colonel Tanner constructed a transparent grating or scale graduated to inches, tenths, and fiftieths, which when superimposed on a photographic plate rendered it easy to measure up to one-hundredths of an inch the horizontal distance between any two objects on the plate.

In order to obtain the value in arc of one inch of plate Colonel Tanner devised this system:—He marked on the ground-glass of the camera two lines six inches apart, and with the camera levelled, and set at the astronomical focus of the lens, he set up signals exactly coincident with the two marks on the ground-glass. Then, taking down the camera, and setting a theodolite up in its place, he measured the angles between the signals, and so had a measure in arc of one inch of plate. This procedure was necessary because the makers of photographic instruments fail to mark on the sliding board of the camera the astronomical focus of the lens as furnished by the optician, and owing to the "depth" of focus of lenses a very considerable error may be made in finding the exact distance up to which the camera should be opened out so as to place the plate at the true focus of the lens.

The grating, graduated to inches and decimals, is capable of being used with any lens after the value per inch has once been determined and tabulated for use.

The views of practical surveyors as to the application of photography to survey operations differ very widely. While some would condemn the use of the camera *in toto*, others seem inclined to make it take the place of nearly every other instrument used by the topographical surveyor. Colonel Tanner pointed out that in its right place, and merely as an adjunct, photography might be made a very great aid in certain circumstances, and while for the survey of of ordinary hilly country he did not see how the camera could be used with any advantage, yet in the case of the Himalayas and other high mountain ranges, he thought that a camera furnished with a rectilinear lens might enable an observer to secure work of a fairly high quality when time or circumstances might be against the use of any other instrument.

In the discussion which followed, Colonel Godwin Austin endorsed Colonel Tanner's views, and being a well-known worker in the high altitudes of Ladak and the Kashmir Himalayas, was able to speak feelingly of the great difficulties under which he had often been obliged to carry on his operations. Mr. Thomson followed with some remarks, and the meeting closed with a vote of thanks to Colonel Tanner.

Societies' Meetings.

Burnley.—At a meeting of the Council on the 10th inst., Mr. J. Butterworth, J P., presiding, the proposal to hold an annual exhibition was discussed at length, and a committee appointed to report upon the matter. The Hon. Secretary (Mr. Sutcliffe) promised a large number of annuals towards the library, and several improvements were suggested to the society's rooms. An excursion was arranged to Liverpool on the 10th, but the day was unfavourable.

Cornish (Camera).—On 15th inst., before a large attendance of members and friends, Mr. W. Brooks, of Reigate, gave a lecture and demonstration of his well-known collodio-bromide process for transparencies. Mr. Brooks successfully developed several plates before his audience, and afterwards exhibited a large number of transparencies of local views taken thirty years ago, and also some from his Windsor Castle series, which were greatly admired.

Hackney.—Ordinary meeting on 16th inst., Mr. Beckett presiding. The excursion for the previous Saturday having been affected by a wet afternoon, an excursion was arranged to Dagenham under the leadership of Mr. T. H. Roberts. Messrs. Salmon, Dando, and Nunn showed prints on the Ilford P. O. P., samples of which had been sent. In every case satisfactory results had been obtained; Mr. Dando stating that the bath he had used for toning was:—Hypo, 1 oz.; alum, 6 drm.; water, 8 oz.; let stand for a while until properly dissolved, shake up, then add in small quantities at a time a solution of 3 drm. carb. soda (crystals), in 1 oz. of water. Filter, then let stand for a day, then add 1 gr. chloride of gold and 2 gr. acetate of lead (previously dissolved in 1 oz. of water). Printing must be carried on to a rather deep colour. Mr. Roberts said he had obtained a brick-red colour in print by printing in sunlight. The Chairman said that Mr. Wellford had given a good formula for toning bath, consisting of 6 oz. water, 4 gr. of gold, 1½ drm. bicarb. of soda; this would tone fast or slow, according to quantity of water added. Mr. Debenham had stated that the more gold used in toning the greater chance there was of permanence. Mr. Hensler showed results on Paget plates. He had been troubled with splashes on them. The Chairman said it looked as if hypo had been the cause. Mr. Hudson presented the society with several old journals, and was warmly thanked. Mr. Poulson asked, would sulpho-pyrogallol be fit to use after two years? The Hon. Secretary said he had used some which he had had about that period and which had given good results. Mr. Bynoe then showed Messrs. Beck's new hand-camera, "The Frena." Cut films were used, and forty could be used in the camera without holders. Mr. Fitch had made films for them which would keep as flat as glass. The camera was small and compact, and was much appreciated. Mr. Bynoe then showed his own invention of printing frames. There was no shadow in printing, and, in answer to the Hon. Secretary, he said prints could not possibly shift. The discussion on the stereoscope then was resumed, and on the question of pairing lenses, Mr. Bynoe said an expert was required to do it. The Chairman had found colours blend very well by one picture being printed differently to the other. The discussion was continued by Messrs. Foulkes-Winks, Reynolds, Bruce, Capel, Dando, etc.

Lewisham.—At the meeting on 19th inst., Mr. B. Davidson in the chair, a very interesting paper was read by Mr. A. L Henderson on "Stereoscopic Photography." He dealt with the subject from its artistic and mechanical standpoints, and fully explained the principles underlying this particular and charming branch of the photographic art. In the course of his paper he exhibited the camera he uses for the taking of stereoscopic views. Among the novel points embodied in the instrument the following may be mentioned:—A holdfast device for the camera legs, to keep them in a definite expanded form; a plumbing device for the swing-back; a sliding-front with two pairs of lenses mounted thereon, one pair long and the other short focus; a magnifying glass cemented to the focussing screen; lenses fitted with diaphragms, having a small lens mounted in each, so as to vary the focus of the combination as follows:—4⅕ in., 6 in., 8in., and 10 in. upon the insertion of either one or other of the stops between the front and back elements of the lens; and lastly a very simple shutter for time or instantaneous exposures, as required. Mr. Traill Taylor took part in the discussion, and gave the meeting some very interesting particulars with regard to stereoscopic pictures, and illustrated his remarks by a number of prints which, with those brought by Mr. Henderson, were viewed through some very neat and efficient stereoscopes kindly lent by Mr. Chadwick, of Manchester.

Southsea.—At the monthly informal meeting of this society, held on the 17th inst., Alderman Ellis, J.P., gave a practical demonstration of the Autotype process of printing. The lecturer had brought with him a number of undeveloped prints, and proceeded to develop these before the meeting, explaining in detail the necessity for each step, and the manipulation required to produce perfect results. This process having hitherto been considered somewhat out of the range of amateurs, surprise was expressed at the simplicity of working and the beauty of the results. Their varied colouring and, above all, their permanency, should win over many converts. Great interest was evinced in the demonstration, and the lecturer was heartly thanked at its conclusion. Mr. Hunt passed round an album of views illustrative of life on an Indian coffee plantation, and Major Bruno showed a new printing frame (Newington's patent), which permits the examination of the entire print, and has a simplified clamping action. The excursion pictures obtained at the recent outing to Midhurst had been kindly judged by Messrs. West with the following result:—Figure studies: 1st, Mr. J. J. Thornton, "At the Stile." Landscape: 1st, Major Bruno, "A Summer's Day." The next excursion will be Romsey on the 25th inst.

Todmorden.—At the ordinary meeting on 16th inst. it was decided to hold an exhibition some time in October. Four new members were elected, making a total of forty-five since January last. After ordinary business several plates were developed, the subject and exposure being unknown to the person developing.

SOCIETIES' FIXTURES.

Aug. 26—RICHMOND.—Show of Prints.
" 26.—HOLBORN.—Lantern Night.
" 27.—TYNESIDE.—Excursion.
" 27.—WEST SURREY.—Outing to Carshalton.
" 27.—RICHMOND.—Excursion to Carshalton.
" 27.—OLDHAM.—Ramble to Oldham Wakes.
" 27.—BRIGHTON AND SUSSEX.—Excursion to Bramber, Coombe, Botolph.
" 27.—LIVERPOOL.—Excursion to Rossett and Gresford.
" 27.—CROYDON.—Photographic Ramble.
" 27.—HACKNEY.—Bromide Enlarging.
" 27.—SOUTH LONDON.—Excursion to Hyde Park and Albert Memorial.
Aug. 29.—TYNESIDE.—Council Meeting.
" 30.—CLEVELAND.—Hand-Cameras.
" 30.—HACKNEY.—"Safety of Dark-Room Light," W. H. Sodeau.
Sept. 1.—LEEDS.—"Carbon Printing," Mr. D. MacIver.
" 1.—HEREFORD.—Excursion to Abergavenny.
" 1.—LONDON AND PROVINCIAL.—"Control of Gradation," W. E. Debenham.
" 1.—NEWCASTLE-ON-TYNE. — Excursion to Gilsland and Naworth.
" 2.—LEWISHAM. — "A Shilling's Worth of Photography,' Thos. Child.
" 2.—RICHMOND.—Informal Meeting.
" 3.—PEOPLE'S PALACE.—Outing to Wanstead Park.
" 3.—CROYDON.—Excursion to Zoological Gardens.
" 3.—WARRINGTON.—Ramble to Higher Walton.
" 3.—NORTHAMPTONSHIRE.—Excursion to Harleston Firs.
" 3.—ASHTON-UNDER-LYNE.—Summer Ramble to Chester.

Correction.—On p. 22 of the "Amateur Photographer's Annual," for Brennaud read Brennand.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5794. **Address Required.**—Can you inform me of any camera club within easy distance of Victoria, S.W., that gives lectures through the winter, whose subscriptions are within the reach of an ordinary working man?—HAL.

5795. **Copying.**—Can any of your readers inform me the best way to copy an old silver print? I have tried once with tissue paper over the top, but the grain of the paper comes out much too plain.—HAL.

5796. **Chloride Printing.**—(1) Could any brother amateur tell me the best way to mount the Eastman gelatino-chloride prints? (2) Why the Ilford gelatino-chloride prints, toning very well, when put into the fixing bath should turn a sickly yellow? I used borax toning bath. (3) What maker would supply me with a really reliable view finder under 3s. ?—PERPLEXED.

5797. **Mottled Negatives.** — I have noticed in developing negatives (more than one in the same solution) that frequently they present a mottled appearance. Can any of your readers kindly tell me the cause of thie, and the way to avoid it?—R. J. P.

5798. **Spotting.**—Can anyone kindly give me any hints as to stopping out small circular spots on negatives; also any hints as to retouching finished silver prints of small scratches or spots? Any information will be thankfully received.—SPOTS.

5799. **Condenser.**—I wish to construct clock-face condensers for enlarging, and also for use with the lantern alone. Would a 10 in. condenser give as good results for optical lantern as a 4 in.? Please give reasons if any.—ALPHA.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

July 15th.—No. 5756.
" 22nd.—Nos. 5763, 5768.
" 29th.—Nos. 5777, 5778.
Aug. 5th.—Noe. 5779, 5780, 5781, 5785, 5786.
" 19th.—Nos. 5790, 5791.

ANSWERS.

5788. **Enamelling.**—Clean a glass plate—an old negative glass or cutting shape will do—with French chalk, and polish thoroughly; now coat plate with enamel collodion, and, having made a solution of gelatine, 10 gr. to 1 oz. of distilled water, slip collodionised plate and print carefully into solution of gelatine, avoiding air bubbles; bring print face downwards into contact with coated plate, remove from solution, and squeegee into optical contact, and allow to dry. When thoroughly dry raise one corner with a knife, and print will strip from glass bearing collodion film with it.—INQUISITIVE.

5789. **Ilford P.O.P.**—It is the use of too much sulpho-cyanide of ammonium.—INQUISITIVE.

5792. **N. Ireland.**—I think "Cantabrigia" had better stay at Portrush. It has several good hotels; the "Northern Counties" is about the best, the accommodation is very good and the charges are moderate. An omnibus meets most of the trains at the station. The Giant's Causeway is best reached by the electric tramway. There are several places on the way worthy of a picture. The tram runs along the coast, and at the Giant's Head and Dunluce Castle one or two pictures may be taken. At the Giant's Causeway there are two hotels. Kane's hotel is the cheaper of the two.—W. W. M.

5793. **Bromide Paper.**—It is both necessary and desirable. The acid clearing bath takes out the yellow from the whites.—INQUISITIVE.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

W. M. G.—You can keep the pyro dry, and then get your accelerator made up as follows:—

Sodium carbonate (pure)	1 oz.
Potassium P. B.	1 "
" ferrocyanide..	1 "
Sodium sulphite	4 "
Distilled water to make	50 "

If you add 2 gr. of dry pyro to every 10 drm. of this you will obtain a very good developer. The carbonate of soda should be the pure recrystallised salt, costing about 6d. per lb, and the carbonate of potash is that of the British Pharmacopœia, to be obtained from any chemist.

BARNETT. — Dip your fingers into solution of chloride of lime made by stirring an ounce of chlorinated lime with half a pint of water, or you can moisten your fingers and rub them with the dry chlorinated lime.

J. B. JONES.—Lead is a misprint for soda; the bath works very well with P. O. P.

W. PAYNE.—(1) Carbon prints are eligible for all competitions; we place no restrictions as to process, except enlargements, which are not admissible. (2) This is too much to answer here, we will write by post.

J. K.—The articles on "Enlarging" were commenced in our issue of March 4th, 1892.

S. DE MORGAN.—It is our intention to publish a special number with criticisms.

R. C. IVY.—We are afraid the only plan is to work a print off in bromide, and treat as you say. It might be possible by cutting a mask to allow the fogged portion to print more than the rest.

C. F. HUGHES-HALLETT.—At the beginning of this year we criticised all prints sent in, but so many objected on the ground that the bulk of the paper was taken up with uninteresting matter, that we adopted our present plan. We might consider issuing a special supplement next year. We will try and find your print and criticise.

E. J. R.—(1) A whole-plate lens can be used on a half-plate, and as only the centre of the field would be used, it would probably not require stopping down so much as when used on a whole-plate; it might therefore require less exposure, but this does not depend upon the size of the plate but on the stopping down of lens. (2) The filme would be quite suitable for India. (3) Fitch's or Edwards's. (4) Try the Fallowfield, from Jonathan Fallowfield, 146, Charing Cross Road. (5) The tabloids are suitable for India. (6) Hypo cannot be obtained in any other form. R. W. Greeff and Co., 29, Mincing Lane, have a new fixing salt which is in a little more convenient form—a powder.

H. HOLT.—Always glad to have your prints. If a figure is wrongly placed, then it is not an improvement; this explains the seeming contradiction.

MILLERS DALE.—You will find an article on pp. 12 and 22 on toning prints which will probably help you. We shall also hope to have an article on the same subject next week, which will answer your questions more fully than we can here. You will probably get cardboard slides from Mawson and Swan, 33, Soho Square, W.

C. W. A. ROSSER.—Agar-agar was tried some years ago for emulsion work, but after numerous experiments abandoned, as the emulsion always set lumpy and showed curious marking, and the use of this substance is the subject of a German patent No. 56,573, which suggests the repeated warming and cooling of a solution of agar-agar, or separation of the clouding particles by mechanical means.

D. S. WHITELAW.—(1) Over-printed, and too many straight lines in it to be good. (2) Too much foreground, and the figures are too much in a row. (3) Here again your print is cut in two by the line of the weir, and has too much foreground. (4) Printed too deep. (5) Flat and poor; you have attempted too much in this, and the principal objects are too small. (6) Negative wants intensifying, and the lettering should have been more sharply focussed. (7) Good. (8) Ditto. (9) The shadow side of the face is too dark, it wants retouching, so as to soften the contrast. Your work shows promise, though in landscapes you try to get too much on your plate, and thus spoil it. Try for little bits rather than panorama, etc.

W. P. CRAIG.—Many thanks for paper, which goes in next week, we hope.

C. GORDON LOWDER (TIENTSIN).—We send letter for you to your agents. The fault of your uniform grey skies is not continuing development long enough. Either replace the caustic soda in your development with carbonate of soda, or else add more bromide to the developer; use less accelerator and develop longer.

W. H. H.—Many thanks for notes. Will you write a letter on your views of hydroquinone, so that we may publish the same, and we will add a rider to it?

W. G. MERRITT.—Your prints look as though the hypo or fixing bath was acid. Add ½ oz. of washing soda to every pint of fixing bath. They may also be over-toned. The circular patch in the centre of your negatives is what is called "flare-spot;" it may be caused by the stops of your lens being wrongly placed or else having worn bright. Return the lens to maker, and ask him to set it right.

BARRY GRIGG.—The spots look as though they were caused by particles of pyro having adhered to the paper. Are you sure that your cutting table and plate boxes are perfectly clean? Write again.

W. B. H.—There is an article on Pinhole Photography in the *Photographic Quarterly*, October, 1890; in the AMATEUR PHOTOGRAPHER, April 29th, 1891; and *Photographic Quarterly*, July, 1892.

ENTERKIN.—We have no further notes on Oban beyond what is in the Annual. Nor do we know of an hotel or lodging-house.

F. F. CADWORTH.—You do not state what paper you are using, or what toning bath. Wash your prints well in water before toning, and when the water drips from the print quite clear and not milky, tone.

W. H. BIBBY.—The print possessed considerable artistic merit, which, as you see, was heavily handi-

capped by want of technical skill, or through carelessness.

H. F. LINGING.—(1) Possibly your stain is caused by non-elimination of the hypo. You might try Edwards's clearing solution formula of sulphate of iron, alum, and citric acid. (2) The best plan is to allow about an ounce of hypo to every sheet of paper. When the gold is exhausted, the half-tones tend to a greenish hue; do not throw the old bath away, but mix it with the new, when you will get finer tones.

NEMO.—It is rather difficult to eradicate the yellow stain. Try Edwards's clearing bath.

Sulphate of iron		1 oz.
Alum		3 ,,
Citric acid.. ..		1 ,,
Water		20 ,,

C. BARNES.—Try Platt and Witte, Birkbeck Works, Ridley Road, Dalston; or Park, 5, Station Buildings, Acton Street, Kingsland; or Lonsdale Bros., 3, Cookridge Street, Leeds.

TIN TACK.—It is a well-known fact that ordinary platinotype paper if exposed long enough in contact with a negative will give an image on immersion in water just like the Pizzighelli print and platinum paper.

M. E. C.—(1) The fault in your prints may be due to one of two causes—either insufficient developing or else the use of too strong a gold bath and fixing bath. For plain paper, weak gold baths and weak hypo baths should be used; half the ordinary strength is about right. But probably the first is the real cause. (2) The cause of yellow stains on prints is probably due to touching the paper with fingers contaminated with hypo. (3) The indistinctness is due either to over-exposure and too strong a developer, or else under-exposure. We could not tell without seeing negative. (4) Block the sky out by painting it over with some yellow gamboge paint after the film has been varnished. (5) It looks as though the negative wanted intensifying; the print is rather over-printed.

Sale and Exchange

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* **2½** *per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

ADVERTISEMENTS *can be inserted under a number' the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.**, *or a commission of* **2½ per cent.**, *upon the sale price of the apparatus.*

Bicycles, Tricycles, etc.—For sale, 52 in bicycle, balls throughout, laced wheels, hollow rime, bent handles, oval backbone, plated and blacked, weight 35lbs., nearly new, built specially to order, price £5 10s, or exchange for camera or lens by good maker.—C. Field, 63, Dartmouth Street, West Bromwich.

Cameras, etc. — Half-plate Lancaster's Extra Special camera, with triple extension leather bellows and six double dark slides, nearly new, cost £6 17s. 6d., sell for £4 10s., or offers.—T. C. Hosking, 1, Baldwin Crescent, Camberwell.

Exchange Griffiths' lantern slide camera for lens, R.R. or wide-angle, or shutter.—Campbell, 2, Ehlana Street, Belfast.

Half-plate camera, mahogany single slide, also lantern, 4 in. condensers, quarter portrait lens fitting both, 52s.—J. Laurie, 36, Fordneuk Street, Glasgow.

Lancaster's half-plate Merveilleux camera, double slide, Instantograph stand, lot 27s. 6d.—Sidney Allpress, Broughton, Huntingdon.

Camera, mahogany 7½ by 5 Woodbury Tourist, leather case, two double slides, beet make and hardly used, £6 6s., cost double; deposit.—30, Stapleton Road, Bristol.

Cameras, Lenses, etc.—London-made high-class half-plate double extension camera, best leather bellows, reversing back, every necessary movement, one double slide, 47s. 6d.; very finest half-plate extra-rapid rectilinear lens, exquisite definition, Waterhouse diaphragms, 22s. 6d.; great bargains; approval.—Cyclist, 8, Kenilworth Road, Willesden Lane, London, N.W.

Gem camera, repeating back, mahogany, four lenses, twelve pictures on quarter plate, locket, or postage stamp size, 30s., or exchange Instantograph quarter-plate, without lens or squtter.—Dr. Finny, Norbiton.

Hand-Cameras, etc.—King's hand-camera, rectilinear lens, Thornton-Pickard shutter, full size finder, perfect condition, 55s.—17, Sedan Street, Walworth.

Fallowfield's Facile hand-camera, quarter-plate R.R. lens, 60s.—H. Jelf, 51, Clarence Parade, Southsea.

Kodak Junior as new, rapid rectilinear lens, instantaneous shutter, fitted with about 30 films, covered leather in case, take 45s.—Saum, 19, High Street, Mold, N. Wales.

Fallowfield's Facile hand-camera, R.R. lens, rotating diaphragm, waterproof cover, 70s., or offers.—Kerdel, 1, Hanover Park, Peckham.

Kodak No A, holds 24 exposures, 2¾ by 3¼, brand new, price £1 10s.—Lennerd, 29, Clarence Street, Preston.

Lenses, etc.—7 by 5 Optimus Euryscope lens, perfectly new, cost £4 14s. 6d., sell for £3 12s.; also half-plate combination rectigraph lens giving three different angles, quite new, cost £2 2s., sell for 30s.—T. C. Hosking, 1, Baldwin Crescent, Camberwell.

For sale, rapid wide-angle Euryscope lens, No. 1 Voightlander, new series, iris diaphragm, will cover 10 by 8, works at about *f*/7; also single wide-angle landscape lens, No. 3 Voightlander, new series, covers 8½ by 6½; both good as new and give good results. What offers?—L. H. L., 65, Shooter's Hill Road, Blackheath, S.E.

Swift's 16 in. focus triple landscape lens, with iris, cost £5 5s., sell £3; approval; deposit.—Conybeare, Ingatestone.

Sets.—Army and Navy Stores' quarter-plate camera, stand, three double backs, first class rapid rectilinear lens, Thornton-Pickard's instantaneous shutter, canvas case, six dishes, six plate boxes, all as good as new (cost over 10Gs), 50s.; also 5 by 4 Optimus lens, almost new, £1.—Hildyard, 11, Moreton Gardens, London.

Quarter-plate mahogany camera, rapid rectilinear lens, folding tripod, drop shutter, double back, very cheap, 58s. 6d. — Presland, Claverham, Berwick, Sussex.

Good quarter-plate bellows camera, rack and pinion, new double slide, single lens, tripod, case, bargain, 16s.; sample print 3d.—Goodman, Carriage Works, Loughboro'.

Magnificent 10 by 8 camera, three slides, velvet-lined case, Rayment's patent, Ross' 14 in. rapid symmetrical, Ross' 9 in. portable symmetrical, Thornton shutter, brass bound, three fold stand and case, all new last November, cost over £30, price £22; also double blind Thornton shutter, 2 in., 15s.; also Chadwick's hand-camera, 12 slides, no lens, home-made quarter camera to use with slides (brass work alone cost 10s.), real leather case, the lot 65s.—Shaw, 5, Great Ancoats Street, Manchester.

Stereo camera, one double, one single slide, well matched lenses, splendid definition, £5 5s., excellent condition; deposit.—30, Stapleton Road, Bristol.

Rouch 5 by 4 camera, changing back for 12 plates, three double slides, leather case, £4; Ross' whole-plate rapid symmetrical, £4 10s.; Dallmeyer W. A. landscape, whole plate, £3; Meagher whole-plate camera, three slides and stand, £4 10s.; two Wray's 5 by 4 R.R., paired by maker, £4; all as new; £18 the lot.—Rev. J. A. Lloyd, Mere Vicarage, Wilts.

Sundries.—Whole-plate Optimus burnisher, 21s; whole-plate mahogany retouching desk, drawer and carriers, 12s.; both new.—17, Sedan Street, Walworth.

Telescope.—Optimus touriet telescope, three draws, 2½ in. object glass, cost £2 10s., price 25s.—Lennerd, 29, Clarence Street, Preston.

Tripod.—Good oak tripod, suit quarter or half plate, bargain, 2s. 6d.—Goodman, Loughborough.

WANTED.

Cameras, etc.—Wanted, quarter-plate camera, hand or stand, suitable for beginner, must be cheap.—10, West Street, Harwich, Essex.

Wanted, quarter-plate double extension Kinnear-shape bellows camera, with turntable and legs, two or more double slides, good maker, cheap for cash; approval; deposit.—W. Clare, Malvern Wells.

Cameras, Lenses, etc.—Whole-plate camera by good maker, also rapid rectilinear lens; letters only.—T. C. Hosking, 1, Baldwin Crescent, Camberwell.

Enlarging Apparatus. — Enlarging lantern, quarter-plate; approval; deposit.—S. Harris, Windsor Road, Airtree, Liverpool.

Sundries.—Wanted, small negative transparency or 8 by 6 enlargement of the common louee. State price to Waters, Chemist, Amble.

Bargains in Cameras and Sets. — 15 by 12 double extension camera, leather bellows, rising and falling front, wide-angle movement, fitted three double slides, as new, take £8 8s.; 12 by 10 camera, double extension leather bellows, wide-angle movement, double dark slide, fitted fine rapid rectilinear lens and sliding stand, a grand lot, £9 17s. 6d.; Optimus whole-plate camera, leather bellows, reversing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterhouee stops, Thornton-Pickard shutter, three double dark slides, three-fold stand and case, £11 5s.; whole plate Underwood instanto, wide-angle movement, leather bellows, double extension, rapid rectilinear lens, iris stops, fine definition, double slide, half-plate carrier and folding stand, as new, take £5 15s.; whole-plate camera by Hare, grand article, leather bellows, double extension, wide-angle movement, double slide, changing box, for 24 plates, also changing slide, Optimus rapid rectilinear lens, Waterhouse stops, brand new three-fold stand and case, take £10 17s. 6d.; half-plate 1892 Instantograph camera, all latest improvements, Instantograph lens, iris stops, shutter, double slide, folding stand and case, take 72s. 6d., as new; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slidee, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; quarter-plate Underwood's instanto, finest order, changing box for 12 ¼-plates, good lens, rotating stops, one slide, folding-stand and case, 35s.; 1891 Instantograph camera, lens, shutter, slides, and folding stand, 32s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Roome, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Hand Cameras.—Swinden and Earp hand-cameras, carries 20 quarter-plates, fitted Taylor and Hobson's best rapid rectilinear lens, roller-blind shutters and case, as new, £6 15s.; Adams' Ideal hand-camera, carries twelve quarter-platee, finest rapid rectilinear lene, two finders, etc., as new, £5 17s. 6d.; Steinheil hand-camera, 9 by 12 centimetres, rapid rectilinear lens, two finders, shutters, carries twelve plates, bag changing, as new, take £4 10s, cost £10 10s.; Optimus detective camera, by Perken, Son, and Rayment, Optimus rapid rectilinear lens, carries six ¼-platee, covered black leather, take £4 4s.; Lancaster's Omnigraph, covered leather, good lens and shutter, take 15e.; Samuel's quarter-plate hand-camera for twelve plates, quite new, rapid rectilinear lens, two finders, take 27e. 6d.; Griffiths' best quality hand-camera, carries six ¼-plates, two sunk finders, good lens, pneumatic shutter, take 30s., cost 42s.; quite new, all above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Cameras! Cameras! Cameras! Lenses! Lensee! Lenece! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any eet upon the best possible terme, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Roome, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus of every description bought, sold, or taken in exchange. Inspection invited.

Bargains in Lenses.—10 by 8 Lancaster's rectigraph lens, Silver Ring, irie stops, as new, £3 7e. 6d.; whole-plate portrait lens, rack focussing, Waterhouse stops, works *f*/6, take 63s.; whole-plate True-view lens by Charterhouee Stores, iris etops, movable hood, quite new, take 65s.; 8 by 5 Roes' actinio doublet, rotating etops, 6 in. focus, quite new, latest pattern, take 60s.; whole-plate Suter No. 3, landscape rotating stops, about 12 in. focus, quite new, 37s. 6d, lowest; 8½ by 6½ Ross' rapid symmetrical, Waterhouee stops, grand definition, as new, £4 12s. 6d.; half-plate Ross' portable symmetrical, rotating etops, 4 in. focus, finest order, 45s.; quarter-plate Continental wide angle rapid rectilinear, rotating stops, as new, 25s.; half-plate wide angle, by Morley and Cooper, rotating stops, as new, 27s. 6d.; half-plate wide angle, by Lancaster, 16s. 6d.; half-plate Ross' rapid symmetrical lens, as new, moveable hood, Waterhouse stops, take £3 17s. 6d.; Mayfield's 7 by 5 rapid rectilinear, Waterhouse etops, covers well, 32s. 6d.; Wray's landscape, casket leuses, 5 in., 7½ in., and 10 in. focus, iris etops, quite new, £3 17s. 6d.; quarter-plate portrait lens, rack focussing, a really good article, take 10e. 6d.; quarter-plate Optimue rapid rectilinear by Perken, Son, and Rayment, Waterhouse etops, covers 5 by 4, focue 5½ in., quite new, take 27s. lowest. All above lensee are warranted as described.— On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

IMPORTANT TO AMATEURS.—Negatives skilfully Retouched. Printed in silver, gelatino-chloride, etc., and Enlarged. Also Developing, Copying, etc.—Terms strictly moderate.—Address, Wilfred Emery, 24, South Street, Baker Street, W.

Have you seen the Latest Mounts?

It is not generally known that we manufacture every class of Photographic Mounts, and that many Presentation Pictures for Her Majesty the Queen and the Prince of Wales are mounted upon our Artistic Mounts.

ASSORTED BOXES OF MOUNTS.

The Best Selection of Photographic Mounts ever placed in the Market.

No. 1 Box, containing 60 different Mounts from Midget to half-plate, 2s. 6d., postage 4½d. extra. No. 2 Box, containing 130 well-selected Mounts, 5s., postage 7½d. extra.

Exhibition Gainsborough Mounts.

Arranged for 6 ¼-Plate Photos, also 6 Cabinets, 6 ½-Plates, 9 Cabinets, and 13 C. de V.'s.

THE CHEAPEST OXFORD LINE MOUNTS IN THE MARKET.

OUR NEW ILLUSTRATED CATALOGUE, containing prices, which can be "quickly" found for any Photo Mount required. The goods can be had through respectable Chemists and Photo Dealers, at prices stated therein, and when compared will be found lower than any others in the trade.

HANNAM & COMPANY, Cardboard and Mount Factory,

Show Rooms and Warehouse:
25, SOHO SQUARE, LONDON, W.

Atlas Works,
GAINSBOROUGH.

THE AUTOTYPE COMPANY, LONDON.

AUTOTYPE DRY PLATES,

Rapid and Instantaneous.

Perfectly Coated with a rich and highly Sensitive Emulsion. Popular prices. These Plates the Company can confidently recommend as equal to any brand in the market.

The following recent Testimonials can be seen at our Office:

"June 21st, 1892.
"I have recommended your plates to all my friends for outdoor work, as I find them by far the best. There is an entire absence of Halation."

"May 25th, 1892."
"I am very highly pleased with your plates; they develop up better than any first class plates I have tried yet. It is the Hydrokinone I develop with."

"June 21st, 1892.
"I prefer your plates to any I have ever tried, being able to get much better contrast than on any other plates."

"May 30th, 1892.
"I find your plates are all a professional can desire."

"May 30th, 1892.
"I like your plates immensely, and when I get rid of present lot will use yours exclusively."

Fine Art Gallery and Offices:
74, NEW OXFORD STREET, W.C.

The Works:
EALING DENE, MIDDLESEX.

LOCKYER'S HYDROQUINONE DEVELOPER

Has been improved "Up to Date." It may now be said to be the most perfect in the market for developing Plates, Transparencies, Lantern Slides, Bromide Papers, and Opals, giving better results than may be obtained by using any of the published formulæ.

Sold in Bottles, 1s. 3d. and 2s. Post free for 1s. 7d. and 2s. 6d. May be had from all Dealers, or direct from

J. E. LOCKYER, CHEMIST, 87, EVELYN STREET, DEPTFORD, S.E.

Wholesale Agents—W. Edwards & Son, 157, Queen Victoria Street, E.C. Barclay & Sons, 95, Farringdon Street, E.C.

PAGET PRIZE PLATES.

RAPIDITY

DENSITY

BRILLIANCY

SO NECESSARY FOR

Hand Camera Work

Are only to be found COMBINED in

PAGET PRIZE PLATES.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 413. Vol. XVI.] FRIDAY, SEPTEMBER 2, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc, from 10 till 1 o'clock.

Our Views.—Retirement of Mr. Hastings—E. London Phot. Soc. Exhibition—Lantern Slide Exchange Club—Notice—Royal Cornwall Polytechnic Society's Awards—Solio Paper.

Articles.—General and Photographic Chemistry (Conrad)—The New Concentric Lens—The Colour Screen in Landscape Photography (Mitchell)—Harmonising Harsh Negatives—Toning Gelatino-Chloride Paper—The "Barnet" Dry Plate Factory—The Society's Standards—Cobalt Toning.

Leader.—Notes on Colour.

Letters to the Editor.—Waste Material (Large)—Exposure for Interiors (J. G. P.)—A Trip to Chicago (J. Fretwell).

Reviews.—Pictorial Selection in Photography (W. G. D.)

Holiday Resorts.—Gloucester.

Apparatus.—Amidol.

Societies' Meetings.—Birmingham — Hackney— Leytonstone—Liverpool—N. Middlesex—P.S.G.B.—Richmond—Sheffield—S. London—Tunbridge Wells—Uttoxeter.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months, 5s. 6d.....	Twelve Months,	10s. 10d.
Postal Union	,, ,, 6s. 6d	,, ,,	13s. 0d.
Out of Postal Union ..	,, ,, 7s. 9d.....	,, ,,	15s. 3d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 40.—"Portraiture and Figure Study." Latest day, Sept. 19th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, October 14th.)

Some of our readers may be interested to know that Mr. Charles W. Hastings, formerly Editor of the Amateur Photographer, from which position he retired at the end of last year, has sold his remaining interest in the above journal and in our other photographic publications, to our publishers, Messrs. Hazell, Watson, and Viney, Ltd., who for a long period have had the principal interest in them.

The East London Photographic Society will hold their Second Annual Exhibition at the New Tabernacle, Old Street, London, E.C., on Tuesday, October 25th, 1892. The Council of the above society will appoint as adjudicators gentlemen of photographic repute, the names of whom will be announced in due course. The following are the classes for competition: Open Class (H), Amateur, General Photography: first prize, silver medal; second prize, bronze medal; third prize, certificate. Entrance fee, 1s., limited to one picture.

Class A. Landscapes and river scenery.
,, B. Seascapes.
,, C. Groups and portraits.
,, D. Instantaneous (objects in motion).
,, E. Architecture.
,, F. Enlargements,
,, G. Novices' class limited to 12 months' knowledge.
,, H. Open class (amateur), general photography.
,, I. For pictures taken at outings.

All exhibits to be the entire work of the exhibitor.

Entry forms and full particulars may be had of the Hon. Sec., Mr. Wilkinson, 28, Shacklewell Lane, Kingsland, N.E., on receipt of stamped addressed envelope.

There are vacancies for a few new members in the Lantern Slide Exchange Club. The rules are:—

(1) Subscription, 1s. per year. (2) One slide at least must be contributed per month; neglect incurs a fine of 6d. (3) Box must only be kept three days, and then forwarded by parcels post. (4) Every detail of slide must be given (printed slips are supplied for this purpose). (5) Slides will be divided amongst the members twice a year.

Mr. A. R. Dresser has kindly promised to criticise the slides every month. Further particulars may be had from A. J. Richardson, Hon. Sec., Summerville, Dore, Sheffield.

We wish to draw the attention of our readers to the following announcement:—

In no case will the Proprietors of the Amateur Photo-

GRAPHER undertake to buy or sell any goods on commission, nor will they be responsible for the safety of any negatives or prints sent to the Editor of the AMATEUR PHOTOGRAPHER for any purpose whatever, although all reasonable care will be taken of the same.

The Editor claims the right of refusing any print, lantern slide, etc., sent in for competition, without assigning any reason for such refusal.

THE following are the judges' awards in the photographic section of the Royal Cornwall Polytechnic Society's Exhibition held at Falmouth :—First silver medals, R. H. Lord and W. M. Warneuke; second silver medals, W. J. Byrne, H. Tonkin, and F. H. Pickford; first bronze medals, W. H. Harrison, W. Scorer, J. Milman Brown, T. Protheroe, C. A. Roe, Major J. D. Lysaght, A. Nicholson and H. D. Arnott; second bronze medals, W. J. Anckorn, and A. W. Gottlieb; hon. mention, A. Guye and A. G. Tagliaferro.

THE Eastman Photographic Materials Company have named their gelatino-chloride printing-out paper the "Solio" paper.

NOTES ON COLOUR.

I.—LIGHT.

(*Continued from page* 115).

WORKING with such simple arrangements as described in our last article has considerable inconveniences; in the first place our beam of sunlight is very tantalising, it refuses to stay on the prism, and therefore we have either to move our prism continuously, or else arrange to keep our beam of sunlight stationary. The latter plan is more convenient, and for this purpose we use a heliostat, a mirror so connected with clockwork as to keep the beam of sunlight constantly reflected through the aperture in the shutter on to the prism.

In practice it is found convenient to make use of an instrument termed a spectroscope, which practically consists of a couple of telescopes with one or more prisms.

With the aid of a spectroscope, with three or six prisms we are enabled to obtain a spectrum of much greater length, and one in which, with one adjustment of the width of the slit, which should not be less than 1 mm., and of the various other parts, the colours are pure and free from any admixture of white light. On carefully examining the spectrum we find that it is not continuous, but is broken up by numerous transverse dark lines, which are called the fixed lines of the spectrum, and which are always found in a certain definite colour, and it is solely this point which interests us—so much so that it is usual to speak of a certain portion of the spectrum which it is wished to accurately define by saying that it is, *e.g.*, between D and E, or if we want to exactly locate the particular part of that colour or space, we say D $\frac{1}{2}$ E or D $\frac{1}{3}$ F, which means to say that the point in question is one-third of the distance from D between D and E. For this purpose these fixed lines were named according to the letters of the alphabet by Fraunhofer, who discovered these lines, Wollaston also doing so independently. In fig. 1 is given a representation of the spectrum obtained by the use of a spectroscope provided with a prism, the chief lines being distinguished by their respective letters placed above, the colours being placed below.

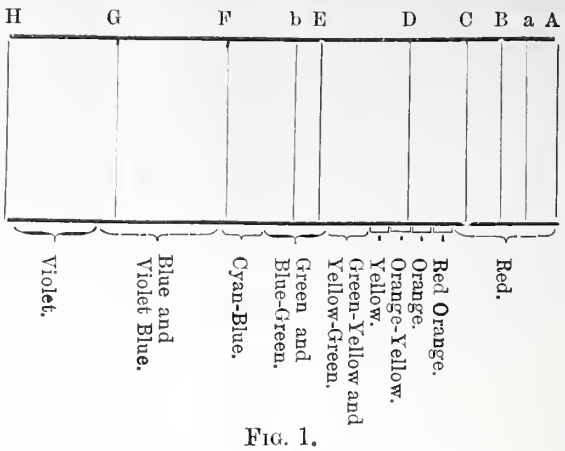


FIG. 1.

The colours of the spectrum, as we have seen, are arranged in a particular order, and this is found to be in the order of their wave length. To explain this term we must make a little digression, and for a simile return to waves on water. Most of us at some time or other have been on the sea, or by the sea, and have noticed the waves rolling, one after the other, sometimes in quick succession, with only a few feet between the highest points of their consecutive crests, in other cases many yards between; the two examples of quick and slow waves are well seen, the former with a rising tide, with a brisk breeze behind, and the latter, when, perhaps, a sea mist has hung over the water all the early morning, in the height of summer, and there is practically no wind, and we find frequently then a long, slow, almost oily wave, only recurring at a fairly long interval. Thus, as we note the quick and short waves, the length of the wave being taken as an imaginary straight line measured from crest to crest, and slow and long waves on the sea, so we find with light long and short waves; but it must not be supposed for one moment that the length of the waves of light are anything like the length of the waves of the sea. We have here to do with waves of almost infinitesimal length, yet these minute wave lengths have been accurately measured, and the results are expressed in "tenth metrets," or ten millionths of a millimetre, which is sometimes expressed as $\frac{1}{10^{10}}$ metres, or as $\mu\mu$. The following table gives the wave lengths of the principal Fraunhofer lines as determined by Angström in 1868 :—

A = 7604·00	E = 5269·13
B = 6867·00	F = 4860·72
C = 6562·01	G = 4307·25
D_1 = 5895·00	H_1 = 3968·01
D_2 = 5889·04	H_2 = 3933·00

Other observers have fixed different values to these lines, but the above may be accepted as correct. It will thus be seen that in the spectrum the colours are arranged in the order of their wave length, beginning with the long waves of red, and passing gradually to the short waves of the violet. Unfortunately, we find one defect consequent on the use of a glass prism, and that is that it compresses the space occupied by the longer wave lengths and unduly elongates that occupied by the shorter. To avoid this defect it has been customary to use, instead of the prism of the spectroscope, a diffraction grating, which is a sheet of glass or metal ruled with an exceeding great number of fine parallel equidistant lines; thus Professor Rowland, of America, has ruled concave diffraction gratings with 43,000 lines to an inch without an appreciable periodic error of one-hundred-thousandth part of an inch; with these reflection or diffraction gratings a spectrum is obtained, which is called the normal spectrum, in distinction to the

prismatic spectrum, or that yielded by prisms, and in the normal spectrum the colours will be arranged in an equable manner with reference to their wave length.

The spectrum is supposed to be divided into 1,000 parts.

THE PRISMATIC SPECTRUM.

Red	149 parts.
Orange-red	45 „
Orange	16 „
Orange-yellow	20 „
Yellow	10 „
Greenish-yellow and yellowish-green	104 „
Green and blue-green	103 „
Cyan blue	48 „
Blue and blue-violet	311 „
Violet	194 „
	1,000 „

THE NORMAL SPECTRUM.

Red	330 parts.
Orange-red	104 „
Orange	25 „
Orange-yellow	26 „
Yellow	13 „
Greenish-yellow and yellow-green	97 „
Full green	87 „
Blue-green	16 „
Cyan blue	51 „
Blue	74 „
Violet blue and blue-violet	117 „
Pure violet	60 „
	1,000 „

Hitherto we have considered only those colours which are distinctly visible to the eye, but if the room in which our spectrum is formed be well darkened, and we shut off the visible spectrum by receiving it on a piece of dead black paper, with very careful observation we can observe a continuation of the spectrum at each end, that beyond the red being a very deep red, or rather a chocolate, that beyond the violet a faint grey; the former are termed the infra-red, the latter the ultra-violet.

If we were considering the question of colour only, these invisible spectra would interest us but little; our subject being, however, colour and photography, these invisible rays, or, at least, one portion—the ultra-violet—are of great importance, and this will be treated of presently.

The existence of these invisible rays may be confirmed by two very simple experiments. Thus, taking the infra-red first, we can prove their existence by moving a thermo-pile and galvanometer from the violet to the red end of the spectrum; as the thermopile advances along the spectrum the needle of the galvanometer will be deflected from zero, its normal position, more and more, till we pass beyond the end of visible red, when it reaches a point of maximum deflection and then gradually goes back to its original position. The existence of the ultra-violet rays may be proved in a somewhat different manner. It is easiest proved by using a solution of sulphate of quinine in dilute sulphuric acid, and diluting with water, or else by using an alkaline solution of æsculin—an active principle obtained from the horse chestnut. Having made our solution, it should be placed in a thin, white glass vessel, such as an ordinary test tube, and entering our darkened room, let us see what happens if we hold the test tube in the various colours of the spectrum. In the red, it appears red; in the yellow, yellow; in the green, green; in the blue, however, our solution begins to appear a peculiar bright blue, which increases as we pass through the violet, and still continues visible after we have left the violet and passed into the space where we suppose the ultra-violet rays to reside. Nor is this appearance visible only in the darkened room, but if the tube containing our solution is held in bright sunlight, against a piece of black velvet, and looked at, not through the peculiar blue shimmer, which is termed fluorescence, is plainly visible.

Letters to the Editor.

WASTE MATERIAL.

SIR,—Would it not be interesting know how much of the precious metals is annually used in connection with photography?

I expect it is a very large amount, and if we knew how much of that is wasted, *i.e.*, allowed to run into the sewers, we should be a trifle surprised. Can it be the cause of so many gold and silver fish? Occasionally I have an idea, and I am thinking that if a large number of us were to combine, and in some way or other to centralise this waste, it might be a case of "out of something, something came." Of course, the scheme would require some organisation, and these hints a lot of trimming (which I have no doubt they will get). I do not know that it would be altogether necessary to have pipes laid on to the under-part of your offices, for all old gold baths and silver washings to get to you, still I must think that if such an arrangement *were* carried out some big benefits would arise. For instance, if the amount, after all deductions for working expenses, would buy, say half a dozen first-class photographic outfits, these should be given to those deserving them, myself one of course, and to any other poor struggling, deserving, son of his ma.

Another year we could buy a life-boat, and name it "The Angel of the Artists of the Sun." There would be also all the paper cuttings. What a splendid pile! These, of course, could reach you in sacks, per Pickford and Co., or we could reduce them to ashes, and charter a special dust-cart for their conveyance. Again, photographic societies might help themselves. Each member should "save what he wastes," and lodge it where arranged, then when the *quantum sufficit* accumulated it should be sold, and with the proceeds some approved piece of apparatus should be purchased for the use and benefit of that particular society. If you think this idea can be successfully worked, and you require a really trustworthy collector to go the rounds of all the London and suburban amateurs, who would be advised through your columns, I can unhesitatingly recommend myself. All I should want at first would be a tricycle with a large tank attached, or perhaps a specially constructed pony-trap, after the style of a sliding body camera, mounted on two wheels, and with a large brass tap at the back, in shape like a photographic lens.

At first sight, the plan may appear the least bit wild; anyhow, I hope it is original.

H. S. LARGE.

* * * *

EXPOSURE FOR INTERIORS.

SIR,—As your correspondent W. H. H. has questioned your advice regarding exposure for interiors, I hope he will not take it amiss if in turn I question his.

Like him, I have photographed a number of cathedral interiors, and if I had given anything like the exposures quoted, the results would, I fear, have been anything but first-class.

In the first place, the developer used by W. H. H. is generally admitted to be the worst possible for the purpose, as hydroquinone has a decided tendency towards hardness and lack of detail in the shadows. My experience is that a weak pyro-ammonia developer is the best, and that to secure first-class results a very full exposure must be given.

Using "Castle" plates and lens at *f*/32, I have never found an hour's exposure too much in the choir or nave of a cathedral—Peterborough perhaps excepted, as the stone is almost white.

The print of Exeter Cathedral, which is enclosed for your opinion, was taken on one of Edwards's instantaneous isochromatic films last June, in a first-rate light, with lens at *f*/32, and received an exposure of nearly 30 minutes.

These films are more than double the speed of the medium ones, but I think you will admit there is no great sign of over-exposure.

My advice would be to multiply W. H. H.'s oxposures by three or four, to use a weak pyro developer, and to carefully back both plates and films.

It seems a great want your never having a monthly competition for the interior class. Could you not arrange to have one now and then?—Yours faithfully, J. G. P.

[The print sent is a very fine example of interior work, full of detail and great softness. On the other hand, our correspondent W. H. H. of last week also sent us some prints of almost equal merit. As the programme for our competitions is fixed for this year, we are unable to make any change, but would include interiors for our next programme.—EDITOR.]

* * * *

A TRIP TO CHICAGO.

SIR,—Your correspondent, Mr. C. J. Harris, asks (page 98) about the import duty on amateurs' photographic apparatus in America. So far as my own experience with apparatus purchased abroad on four different occasions goes, I may say that if his camera, etc., bear signs of usage abroad, and he swears that he has used them for twelve months, they will probably be admitted free of duty, but if they are new, he may be obliged to pay a duty, which in my case amounted to about eightpence on every shilling of prime cost. But I think in this case excursionists whose return tickets give prima facie evidence of their character as such, will not have duty to pay. I have been allowed to take American dry-plates, etc., into Canada upon giving the assurance that I was only a tourist, and should take them back into the States when used. One warning, however, I would give to all intending visitors to the Chicago Exhibition, and that is, to make as much of the journey as possible by Canadian lines, both of rail and steamer. The "gospel of hoggishness," of which Major MacKinley is the chief prophet, is bearing its natural fruit in the riots at the Carnegie Ironworks, and the strike of the railroad switchmen at Buffalo, and the articles in the papers, showing how eight hundred belated excursionists were held outside Buffalo from daybreak to noon, show what you may expect next year. If the railroad men use the opportunity afforded them by the Chicago Exhibition to enforce their claims for a full share in the railroad companies' profits, they will only be carrying out Major MacKinley's principles, but in doing so they will undoubtedly expose the foreign tourists to very great inconveniences. On the other hand, the Canadian Pacific Railroad Co. and the Grand Trunk Railroad Co., as well as the Allan, Dominion, Beaver, and other Canadian steamship lines will undoubtedly make special arrangements for the comfort of their customers and a good understanding with their work-people. I should advise those who come, to form clubs for mutual protection, and make all arrangements for transportation with the companies' agents in England. In this way they will certainly travel more cheaply and comfortably than as individuals. Much more than the custom-house duties, I should fear the vile smells, the bad water, the great heat, and enormous hotel charges of Chicago. I spent six months very cheaply and comfortably at the Philadelphia Exhibition of 1876—my average expenditure not exceeding three guineas a week, but the heat was sometimes 103° Fahrenheit in the shade, and many visitors were prostrated by it and by unwholesome food and drink. Naturally photographers will prefer to bring their own instruments, for the finest scenery they will pass is that of the voyage past Newfoundland and up the Saint Lawrence River, but to those who contemplate purchasing here, I would say that while lenses, dry-plates, and chemicals are far cheaper in Europe than here, the American cameras and all cabinet work are as good and as cheap as those of Europe. For tourist and hand work, for instance, I find a Blair camera (hawkeye or extension), with a Wray or Beck lens, better than any camera I could buy for the same money in England. Dry plates 4 by 5 inch, cost here on glass 65 cents or 2s. 8d., on Eastman or Blair film 75 cents or 3s., and on Carbutt celluloid film 80 cents or 3s. 4d. per dozen, and other sizes in proportion. I prefer the films because the glass is mostly very thick and seldom flawless, while in every dozen I find one or two plates which, though they may fit the spring-holders used here, are too irregularly cut for the book form of dark slide used in England.—Yours truly, JOHN FRETWELL.

Reviews.

Pictorial Selection in Photography. By W. G. D. Price 7d.

The author has given us in this little pamphlet of twenty pages a very clearly written treatise on pictorial selection, and evidently fully understands his subject. Numerous illustrations are included, some of which certainly recall illustrations which have appeared in other works and in our pages. The pamphlet is well printed, and copies may be obtained from Mr. H. D. Gower, 16, Wandle Road, Croydon.

COBALT TONING.

M. ALEXIS REDARES, in a communication to *La Photographie*, relates his experience in regard to cobalt toning. He says, in place of cobalt depositing itself on albumenised paper in a metallic state it deposits brown oxide of cobalt, and the proofs obtained are of a reddish colour, and leave much to be desired. He used the following solutions:—

A.

Water	1,000 cm. 3
Chloride of cobalt	10 gr.

B.

Water	1,000 cm. 3
Acetate of lime	40 gr.

100 cm. 3 of A mixed with 130 cm. 3 of B, leaving this mixture three or four days before filtering. Test by sunflower paper to find if solution is acid or basic. If acid, add drops of a 10 per cent. solution of bicarbonate of lime. If basic, saturate with a 10 per cent. solution of hydrochloric acid. The bath should be absolutely neuter, otherwise it will not tone. From two to three days are required to tone by this process on ordinary paper. Fix with hypo-sulphite as usual.

M. Rédarès has used in the bath acetate of lime in place of acetate of soda, which he finds has no reducing power on the salts of cobalt. He expresses hopes of perfecting the cobalt toning, and regrets he cannot yet give a formula which will tone in a couple of hours.

A Giant Panoramic Camera of Moessard's pattern has been dispatched by Messrs. George Houghton and Sons, of 89, High Holborn, and was made for the Canadian Pacific Railway, and to take pictures 48 by 15 in. It is the largest camera of the kind constructed, and took eight months to make, and will cost about £100. The lens is a rapid rectilinear, $2\frac{3}{4}$ in. in diameter, fixed focus, 20 in., working at about *f*/10, made by Hermagis, of Paris, and is valued at about £30. A stop with an oblong aperture is fixed in the lens. There are also the ordinary stops, the largest aperture being 2 in., the smallest $\frac{3}{8}$ in. The camera is made of well-seasoned French walnut wood, unpolished, and with flush panels, and in packing up the sides and top fold over. The camera stands on tripod stand, which is 51 in. from the ground. The back of the camera is semi-circular in form, and the slides, of which there are three, are flexible, being made of card and cloth, fitted with celluloid and metal rims. Films, of course, are used. Wood clamps are supplied to hold the slides firm and flat whilst putting in films; also a strip of ground glass in case the fixed-focus may require adjusting. The front of the camera is of black indiarubber cloth. In the middle of front is fixed a metal support to hold the lens front, which can be moved in a semi-circular direction by a bar-lever on top of camera. Two lines are cut in the wood of camera top to mark the limits necessary to move lens in order to cover the whole of the film, which is exposed about $\frac{1}{4}$ in. at a time. This is arranged by means of a cone of blackened wood connected with the lever which moves the lens, the cone and lens thus always keeping in horizontal line, and moving simultaneously. The cone is 15 in. high, about $3\frac{1}{2}$ in. broad near the lens, and is a slit of $\frac{1}{2}$ in. broad near the film, thus allowing only a narrow strip of the film to be exposed at one time. The rise and fall of the lens is provided for by means of two extra wooden fronts, which are easily attachable. The camera is fixed to the tripod head, which is 15 in. diameter, by a central screw. There are also three other ordinary-shaped screws placed at equal distance in the tripod head, and working against a thin flat strip of metal fixed to the bottom of camera, which serve to adjust the level of camera. A small level is fixed on top of the camera. The panorama included is about 120 deg. The tripod is made of walnut, being $3\frac{1}{2}$ in. wide, and the whole when packed in a case weighs about $1\frac{1}{2}$ cwt., and measures 54 in. long by 34 in. high and 17 in. broad.

General and Photographic Chemistry.—V.

By E. C. Conrad, F.C.S.

THE NON-METALLIC ELEMENTS AND THEIR COMPOUNDS.—(*Continued*).

NITROGEN (N=14).

One litre at Stp. weighs 1·25 gram.

Oc.: In the air, of which it constitutes four-fifths by volume, it is given off in large quantities from subterranean sources. M.: It can be obtained from the air by several methods—(1) By burning a piece of phosphorus in a confined portion of air, all the oxygen will be withdrawn to form phosphorous pentoxide and the nitrogen will be left. (2) By passing a current of air over heated copper, the oxygen will form copper oxide, and the nitrogen can be collected. (3) A solution of cuprous chloride in hydrochloric acid absorbs oxygen from the air; Eq.: $Cu_2Cl_2+2HCl+O=2CuCl_2+H_2O$ and 4N from the air. Nitrogen can also be prepared by passing chlorine gas through a strong solution of ammonia; the ammonia must be in excess to prevent the formation of an explosive compound. By heating a solution of ammonium nitrite; Eq.: $NH_4NO_2=2H_2O+N_2$. By heating a mixture of sodium nitrite and ammonium chloride; Eq.: $NH_4Cl+NaNO_2=NaCl+2H_2O+N_2$. P.: Pure nitrogen is a colourless, tasteless, inodorous gas very slightly soluble in water, 100 c.c. of which dissolve about 1·5 c.c. of the gas at ordinary temperatures. It is incombustible and a non-supporter of combustion. It is an inert body combining with very few elements directly. Although nitrogen is inhaled in large quantities at every inspiration, it is without any action on the animal economy, but is most important in regulating the supply of oxygen to living organisations.

The Atmosphere.—The gaseous envelope of the air that surrounds us is a mechanical mixture, and not a chemical compound. For although the chief constituents are almost quite constant in their relative amounts yet they are not in combination, their perfect mixture being due to the property of gaseous diffusion, by which a mixture of gasses become uniformly diffused over any given space irrespective of their relative specific gravities.

Proportion of Oxygen and Nitrogen in the Air.—The proportions are for 100 parts—

	By Weight.	By Volume.
Oxygen	23·00	20·83
Nitrogen	77·00	79·17

Although oxygen is always being withdrawn from the air by respiration, combustion, and oxidation, yet the amount contained is so vast that, without reckoning any cases of increase (some of which may be mentioned in the course of this work), it would take many centuries to affect the relative proportion by more than the merest fraction.

Other Substances in Air.—Besides the two gases mentioned, the air contains quantities of several other substances, of which the most important are—

(1) Ozone in air. The amount of the allotropic modification of oxygen in air is relatively very small, being in country air about 1 volume in 700,000, increasing in sea air, and much less in the air of towns. Its principal use appears to be the oxidation of putrid organic matter.

(2) Aqueous vapour in air. Water suspended in a state of vapour. Air is never quite dry, but the amount of water contained is constantly varying, depending on the temperature, direction of the wind, etc. All bodies of water give off vapour under the heat of the sun, and atmospheric changes cause the excess to be thrown down as rain, dew, etc. Water vapour is no doubt one of the most important agents in increasing the heat of the air, by retarding the passage of the heat rays from the sun, and to much greater extent by the large amount of latent heat that becomes manifest on its condensation.

(3) Carbon dioxide in air. Carbon dioxide is always found in the air, and is continually being produced by the combustion of carbon compounds and to a larger extent from subterranean sources. It is, however, being continually decomposed by the action of the green colouring matter (chlorophyll) of plants in sunlight, the carbon being retained by the plant and the oxygen returned to the air. It has been observed that a square metre of leaf surface can decompose a litre of carbon dioxide in an hour of bright sunlight. The amount of this gas contained in the air varies from about 3 to 10 parts in 10,000 parts of air, but as the S.G. of the gas is high and therefore its diffusive power low, it may increase to a very large extent in confined situations. The air of a room containing only 0·1 per cent. of carbon dioxide is unfit for continual respiration, hence the importance of ventilation. Although the relative proportion of carbon dioxide in the air may appear small, the actual amount contained in our atmosphere has been calculated at 3,000 billion kilos.

(4) Ammonia and nitric acid in air. The air always contains ammonia and nitric acid in variable quantities and in relatively small amounts. It is from these compounds that plants obtain their nitrogen; they do not appear to be able to draw it direct from the air.

Average Composition of Air.—The following table gives the average approximate composition of ten thousand volumes of pure atmospheric air.

Oxygen	2065·94
Nitrogen	7790·60
Carbon dioxide	3·36
Ammonia	0·08
Ozone	0·015
Nitric acid	0·005
Aqueous vapour	140·000
	10,000·000

Besides the above, air often contains many accidental impurities.

Extent of the Air.—It is probable that the atmosphere, in an exceedingly rariated condition, extends through space, and that the condensation round us is caused by the earth's attraction. The portion so affected extends about forty-five miles from the level of the sea, but rapidly decreases in density.

Pressure and Weight of the Air.—The pressure that the air exerts is measured by the barometer, and is about 14·73 lb. on every square inch of surface. The weight of a litre of dry air at Stp. is 1·293 gram.

Ventilation.—It is of great importance to health that the air in rooms and houses should be kept as pure as possible by a constant circulation of the air, and this is especially necessary in dark-rooms, as the impurities in the air affect chemical substances, and temperature chemical operations.

We may point out that it is practically useless to provide a way of escape for the impure air, unless provision is also made for the entrance of pure air and a current produced. A draught is not desirable and quite unnecessary, but the air must circulate.

(*To be continued*)

Dark Room.—The Misses Abrahams, Pension Anglaise, Heidelberg, Germany, have now a perfectly fitted up dark-room, with washing tank, etc., for changing or developing plates. As there are plenty of good subjects about Heidelberg, this will be useful information for amateurs bent on a tour in Germany.

The New Concentric Lens.

THE construction of a lens to give a "positive" focus or that caused by rays of convergence has hitherto been obtained by the radius of convexity of one refracting surface being shorter than the concave one. As an illustration of this, take a simple lens of the form shown in the diagram (fig. 1). If the meniscus form of this were to be altered by making the concave surface deeper, the lens would have no convergent focus at all, the rays would become divergent, and the result would be negative. Supposing this lens to be a compound made up of crown and flint glass, the latter having the greater refractive power, it will still be observed that the sum of all the positive curves is deeper than the sum of the negative radii. This form of construction is reversed in the "concentric," in which lens the convex surface has a longer radius than the concave, the diagram of which would at first sight lead

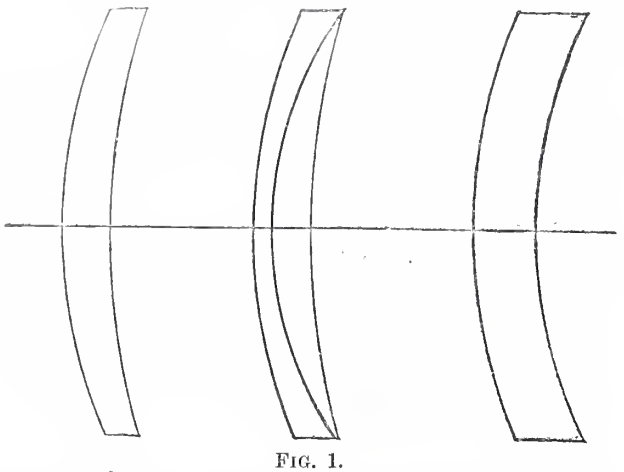


FIG. 1.

one to expect a negative focus without any image; but this is not the case, for, by the selection of a suitable crown glass for the positive element, of higher refraction than the flint of the negative element, the rays are caused to converge, and by the special effect of refraction on the oblique pencils the lens, although of this peculiar form, gives a real image free from distortion on an absolutely flat field extending over a circle of about 75 degs., the margin being as sharply defined as the centre; and, moreover, the whole is practically as equally illuminated as the theoretical limit will permit.

Every simple lens is represented by a system of prisms, whose angles are formed by the tangents of the radii. If two prisms or lenses are cemented together to form an achromatic prism, or lens, the angles of the two components are in a certain relative proportion, determined by the ratio of refraction and dispersion of the glass employed. When rays pass through such a lens, achromatic both at centre and margin, these angles may then be

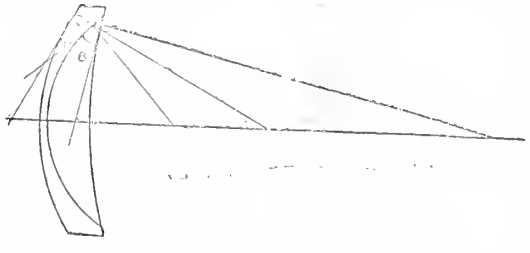


FIG. 2.

greater, yet the relative ratio of both must be the same as those at the centre, for, if they differ in ratio, the marginal pencils will not be achromatic, and will be deviated in undue proportion, and besides colour, will cause optical distortion. Taking an ordinary compound meniscus lens, whose curves are represented in the diagram (fig. 2), we find that the tangents of the three curves are parallel at the centre, so that there is no distortion or deviation of the direct incident pencils; but, as we leave the centre, we find that the tangents of the first and second curves approach one another, forming a wedge or prism, and the tangents of the second and third curves form a similar prism of smaller angle and in the reverse direction. This implies a greater power of the crown lens at the margin; and, as this has positive aberration, the image produced by the margin of the achromat must be smaller than the central image, and hence barrel-shaped distortion and coloured fringes are produced. In the diagram (fig. 3) representing the "concentric" lens, it is evident, on consideration, that on account of concentricity the two tangents, which, with the central plane, form the prisms, are always parallel, and the angles formed in constant ratio. Such an achromat will there-

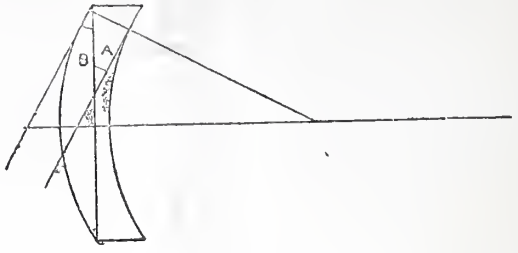


FIG. 3.

fore produce neither general distortion nor distortion of the coloured images.

The field of the concentric lens is practically illuminated equally all over. In all lenses the diaphragm reduces the amount of light in proportion to the deviation of the oblique cone of rays from the central cone (fig. 4). This diminution of light towards the margin of the field is small, however, when compared to that

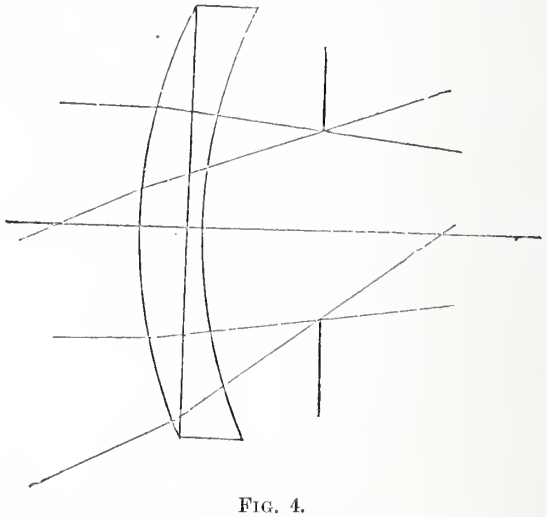


FIG. 4.

due to astigmatism and longitudinal spherical aberration in all ordinary lenses. The elliptical appearance of the diaphragm, caused by the oblique direction in which it is viewed, is exaggerated by the distortion in ordinary lenses, which have the property of diminishing objects in the horizontal diameter, whereas in the "concentric" lens, the diaphragm retains its proper shape until the light has nearly vanished. This is the effect of the opposite refraction due to the negative meniscus form having a positive focus, and which tends to open out—so to speak—the diaphragm to its normal circular form. An ordinary lens bringing its central rays to a sharp focus may be so constructed as to do so marginally also, but only on a curved field; a flat field being alone obtainable with such a lens by undue lengthening of the marginal pencils, resulting in astigmatism at the expense of definition. The rays do not actually meet in one point, so that the major portion is lost; or worse, they only assist to obliterate the sharpness of the actual working rays. In the "concentric," however, the whole pencil of rays go to form the image equally at the margin as at the centre.

Theoretically, a lens has no depth of focus; or, to speak more correctly, no depth of definition, for—optically—focus is a point. At the focal point the sharpest definition is obtained, but on each side there is a certain amount until the aberration becomes so

great as to be perceptible. Ordinary lenses which come to focus sharp only in the centre of the field, with vanishing distinctness towards the margin, are said to possess a certain depth of definition; but this is alone true for the centre, the remainder of the field being only a compromise for definition at all. In the "concentric," however, we start with sharp and equal definition all over the field, due to its novel system of construction; and thus the definition of all objects situated equidistant from the principal focussed object is equalised. Also, as there is no distortion or deviation of any portion of the cone of rays they may be said to cling closer together for a longer distance on each side of the point of true focus. The "concentric," therefore, more nearly yields the theoretical amount of depth of definition (regulated more or less by aperture) than any other lens, and consequently may be said to possess greater depth of focus or definition over the entire field.

In practice it is found that the "concentric" lens is considerably more rapid than other lenses of equal aperture and focus. By referring back to the diagram (fig. 3), shown to illustrate the loss of rays from spherical aberration and distortion, it is apparent that the whole cone being brought to a focus in the "concentric" without distortion, the "concentric" consequently works quicker than lenses in which a portion of the rays only is used, and where the non-focussing rays merely interfere by throwing useless light into the shadows.

Having now drawn attention to some of the chief differences between the "concentric" and other lenses, it will be desirable

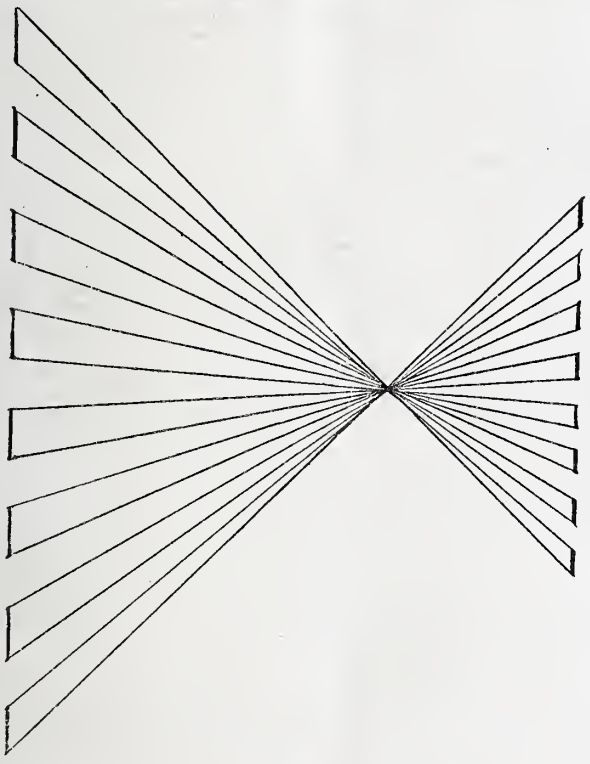


FIG. 5.

before proceeding to examine and compare these lenses optically, to explain the principle upon which the testing apparatus is constructed. We use a stand to carry a photographic lens in direct line between a stationary lamp and a concentric and aplanatic magnifier; the adjustments attached are to alter the distances between the positions for convenience of focussing. Having by this means examined the central pencil, the magnifier at the back is moved aside in a line towards the margin of the field, and a movable lamp placed at a distance is traversed on a plane parallel and at the same level as that in which the magnifier is moved, and which corresponds to the surface of the ground glass of a camera; the magnifier is moved sideways until the lamp and attached dial are visible, the angle subtended then being equal to that of the opposite side. This represents the view angle, or, as the case may be, the diagonal of covering at that particular angle. The two diagrams herewith (figs. 5 and 6) represent the principle upon which this method of testing is based, and it will be found that all that has been stated in connection with the "concentric" lens is optically correct, both when taken by itself and in comparison with other lenses. It should be mentioned that the magnifier being of the form of a sphere with concentric surfaces, the focal distance from

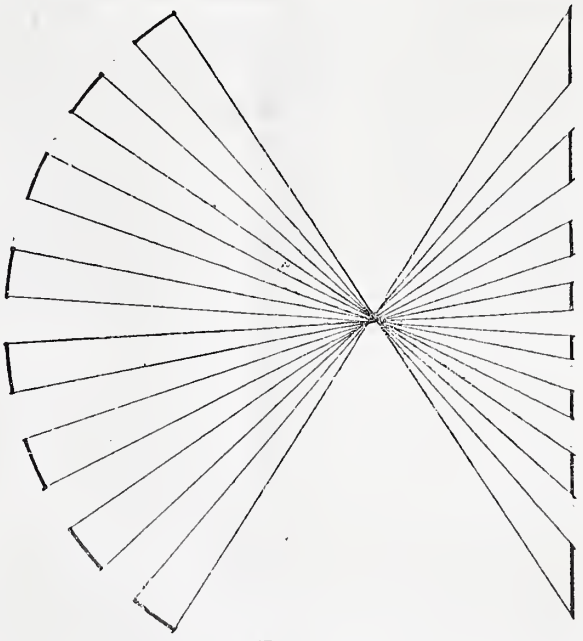


FIG. 6.

the centre is the same at all angles of obliquity, so that it requires no axial adjustment to meet the line of an oblique ray.

The above paper by Dr. Schroeder, the eminent optician, was read by Mr. Heyburn before the P.S.G.B., and the following is an abstract from the discussion which followed:—

Mr. Stuart said they claimed that the lens would give absolutely straight lines, used as a single lens, because the Gauss points were exactly in the centre, the diaphragm practically bisecting them. Supposing one of the combinations of a symmetrical lens were taken and used as a single lens the diaphragm would have to be pulled out considerably or the distortion would be very great. With the concentric, however, one of the combinations could be unscrewed and the other used without any alteration in the position of the diaphragm, and no distortion whatever would be produced. It might be used for copying maps, and, indeed, had already been so used.

Mr. Debenham said he had always stoutly maintained—and until he saw it demonstrated to the contrary he should continue to do so—that no lens was superior to any other lens in depth of focus. He supposed anyone would admit that with a lens giving good marginal definition the screen or the object might be moved for a certain distance and still show a certain amount of definition, but he should call that simply better marginal definition—that, he thought, was a better description of the characteristic. Further, the paper spoke of the concentric lens being quicker than other lenses, because where the rays were not brought perfectly to a focus some were lost by spherical aberration. That was only equivalent to saying that when a thing was perfectly focussed it was quicker than when it was out of focus, because whether there was spherical aberration or confusion by being a little out of focus came to the same thing. Of course there was less concentration of the light, but when the dispersion of the light surrounding it did not produce the effect of being lers exposed; a picture was not found to be under-exposed in the unsharp parts more than in the sharp points. He thought the claim for rapidity in this respect was a mistake. With regard to the last diagram (fig. 6), showing the nearer points which were said to be distorted, he thought it altogether a mistake to call that distortion. It would be the same absolutely with this lens as with any other in viewing objects in that form. If they were arranged in a semicircle towards the lens they would be repre-

sented, by this or any other lens, large towards the margin, and smaller towards the centre, and that was not distortion, but simply the perspective of near-plane objects. He expressed his regret that these claims, which he regarded as mistaken and erroneous, should be made in respect of such a fine instrument as the concentric lens undoubtedly was. He had seen the lens and examined the definition and flatness of field, and thought it was a great additional power to the photographer; and in all cases where rapidity greater than No. 16 uniform system was not required, it seemed to him that it would be more useful than probably any lens that had preceded it, at all events where a widish angle was required. It was therefore much to his regret that these claims should have been made in connection with such a splendid instrument.

Mr. Stuart thanked Mr. Debenham for his complimentary remarks, but could not agree with what he had said about the rapidity of the concentric lens not being more than that of another lens of the same aperture and focus, for the reasons given by Dr. Schroeder. It must be apparent to anyone that where the rays come to a point there must be more intensity—that could be illustrated with a common burning-glass. There was another reason: less secondary spectrum in the glasses used than in the flints and crowns usually employed.

Mr. Debenham: Except the apochromatics.

Mr. Stuart: Even they could not be so colourless as lenses constructed of practically two crowns as in the case of the concentric. The glasses used were so crystalline that if, say, a symmetrical and a concentric were examined side by side on a piece of white paper, the difference of colour could be seen at once. He hoped Mr. Debenham would not say that colour in dense glass was not detrimental to the rapidity of a lens. In the construction of telescopes, when using a glass of a specific gravity of, say, 3·65, he had found that one maker's glass would take about 10 per cent. off the light of another maker's. He did not say there would be that difference in photographic lenses, but it was certainly appreciable, and he thought it a sufficient reason for claiming extra rapidity for the concentric. But he would take the question practically. Like Mr. Debenham, he was himself an old hand at the camera, and he had had the lenses tried side by side on the same plate, and the concentric lens gave an intense image, while the other was much under-exposed. He would go so far as to say that there was practically a difference in rapidity of 25 per cent. in favour of the concentric over any other lens, no doubt due to the absence of colour and secondary spectrum in the glasses used, the extreme intensity and sharpness at which the rays were brought to a focus at all parts of the image; and the fact that the lenses are exceedingly thin, each combination having practically an equal thickness at all parts, which is not the case with other lenses.

Mr. Debenham said on the question of speed two points had been made. One referred to colour, and it had been put upon him that he was to quarrel with opticians, and tell them that the colour of a lens had nothing to do with speed. He did not speak about colour, nor did the paper; he only spoke about what the paper mentioned. The introduction of the question of colour was a new thing, and it was not fair to say that he had suggested that colour made no difference. He would, however, say this—that the difference between the colour of such lenses as Mr. Stuart had been sending out for many years—the rapid symmetricals—and the most colourless glass that could be had, was not very great. The rapid symmetricals had not got deep yellow or green glass, the colour was very slight, as he thought Mr. Stuart would agree.

Mr. Stuart quite acquitted Mr. Debenham of bringing up the colour question, but he had asked for a reason why the concentric was more rapid than another lens. Dr. Schroeder did not go into the matter in the paper, but on a previous occasion he had given that as one of the reasons. As to the assertion that the rapid symmetrical had not more colour than the new lens, that could easily be tested by putting them side by side on a piece of white paper.

Mr. Debenham said the second point to which he desired to call attention was that of speed, owing to the concentration of the rays absolutely at one focal point. He thought anyone must see that if that was so—if that made a lens more rapid—the mere putting the plates a little out of focus would destroy rapidity, whereas that was not the case; a lens did not have a less rapid effect if out of focus. He wished to protest against the assumption that the slight amount of spherical aberration in the ordinary lenses caused a loss of rapidity on account of the light not being brought all absolutely to one plane, because although the light was not absolutely focussed in one plane, it was present.

The Chairman said the light was all there, but not on the part of the plate where it was wanted.

Mr. Debenham said it was so close to it that it was only very slightly out of focus, and they did not find a picture very slightly out of focus any less exposed than one which was perfectly focussed.

Mr. Stuart said he was quite ready to put the point to the test in the camera.

The Colour Screen in Landscape Photography.*

BY CHARLES L. MITCHELL, M.D.

THE value and use of orthochromatised emulsions in landscape photography is now fully recognised, but as yet there still appears to be considerable difference of opinion in regard to the necessity of the co-incident employment of the colour screen. It is stated by many of the manufacturers who at present supply the market with iso or ortho chromatic plates, that the use of this valuable adjunct is by no means necessary, and that equally good results can be obtained without it. Having, during the past two years, made extended trials for landscape purposes of orthochromatised emulsions, coated on both glass and celluloid films, and during these experiments made frequent use of the colour screen, a few notes on the principles and methods of its employment may perhaps be of interest. The class of subjects selected was almost exclusively landscapes, and the large majority extended landscapes in the mountainous regions of Switzerland, Norway, and Northern Italy, involving distances ranging from ten to one hundred miles. The first year the colour screen was used sparingly, but the results obtained with it were so satisfactory that in the following year it was used whenever possible, and the success attending its use was so marked, and the quality of the work so far superior to the portion in which the screen was omitted, that I now am fully convinced that the colour-screen is an indispensable adjunct for any extended or comprehensive landscape work. The reasons for this opinion are not hard to find. It is a well-known fact that when an open landscape is photographed on an ordinary gelatine emulsion, two serious difficulties are always encountered. These difficulties bear such a relation to each other that the means employed to prevent the one always increase the evil effects of the other. I allude to the difficulty of obtaining even and harmonious exposures for both near foreground and extreme distance. The rapidly vibrating blue rays coming from the more distant portions of the landscape, produce in an extremely short time a very powerful reducing effect upon the emulsionised silver salts, and that long before the more slowly vibrating rays coming from the nearer and generally darker foreground have had time to properly act on the plate. The consequence is that when proper definition, detail, and colour value have been obtained in the foreground, the distance has been so over-exposed as to solarise to a greater or less degree that portion of the image. On the other hand, should the exposure be so shortened in time as to obtain proper values for the distance, the foreground is so hopelessly under-exposed as to be but an unmeaning smear of black, devoid of all detail.

All kinds of devices have been suggested for remedying these difficulties. Sky shades, shutters having apertures of different shapes fancied to diminish to a certain degree the exposure of the sky and distance, etc., etc., have at different times been suggested, but none of these have proved of sufficient value to become popular.

The difficulties, as above noted, are particularly noticeable in the case of Alpine landscapes. Here there is often a foreground of rocks and dark pines, abounding in dark greens and browns, and opposed to it a distance composed of brilliant snow-white peaks and glaciers, standing out against a deep blue sky, varied, perhaps, with floating clouds. With an ordinary emulsion it is almost impossible to render properly such a landscape, as the foreground will be under-timed and lacking in detail, or else the peaks and sky will be so over-exposed or "burnt out" on the negative as to render the demarcation line between snow and sky almost indistinguishable. When, however, certain colouring agents are added to the ordinary emulsion, as is done in the process of orthochromatising, an entirely new condition of affairs is brought about. I will not attempt to explain this in detail, for it has and will be done by much more able and qualified hands than mine. Suffice it to say, briefly, that while the emulsion is now in its altered character a little less sensitive to the action of the blue rays of the spectrum, it is more sensitive to the yellow, green, and red rays coming from the opposite end of the

* Read at the Photographic Convention.

spectrum. A plate of this character, when exposed to the same alpine landscape as previously tried, would exhibit much more detail in the foreground, and the distance would be in much better tone. But although the sensitiveness of the plate, as orthochromatised, is of a much less degree as far as the blue rays are concerned, they are so powerful that they still act too rapidly on the emulsion, and it is desirable to limit still more their effect. This is accomplished by the colour screen. A suitable coloured medium, in this case yellow, is interposed between the object and the sensitised plate. This medium intercepts the passage of the blue rays to a certain extent, or diminishes the rapidity of their vibrations, and while prolonging thus the exposure allows the reds, greens, yellows, etc., to pass through without hindrance, and impress themselves fully upon the plate. The resulting image will now represent in much more accurate colour tone, as expressed in black and white, the different values of the landscape, giving full detail and softness to foreground and showing in the distance white peaks against a darker sky.

For purposes of landscape photography the colour screen employed should generally be of a light yellow shade, except in some special few instances, when to obtain particular effects in a landscape, coloured screens of more or less of a red or reddish orange may be found to be desirable.

From this brief explanation the principles which govern the employment of the colour screen may be made apparent, and on its very face the theory of its action would seem to be correct and of sound value. And I unhesitatingly assert that when the colour screen is *properly* used, the results will, in every instance, bear out the sound principles of the theory—landscapes when, while full justice is given to atmosphere, the distant ranges of hills are as clearly defined as they would be to the eye; water which looks like water and not an expanse of snow; foliage and verdure which show the varied shades of greens with which nature bedecks herself; or the varied tints in an autumn landscape, and clouds of white or pale grey floating on a darker sky, as we see them daily in the heavens. But a colour screen should be used with judgment, as should every other photographic adjunct, if good results are to be secured. Not for every subject, or for instantaneous work, or generally for objects close at hand, but for the special work for which its usefulness has been explained. Let us for a moment consider this and its practical features a little more in detail.

The first point to be considered is the colour screen itself. This should be of glass, perfectly flatted and ground to a true surface, or else it will produce such an amount of distortion as to render it totally unfit for use. In England, I have been informed, one or two firms offer for sale colour screens made of yellow pot glass ground and polished to a true surface. The only one of these I have been able to see was of so light a colour, and that more of a brown than a yellow, that I should feel afraid to use it. The quality of others may be better. It is very easy, however, for any photographer to prepare his own screens, and of whatever colour he may desire, by a process which I shall now describe.

Procure plate-glass, thin, perfectly flat, ground, and free from all striæ or bubble. The thin plate-glass that is frequently used for making colour cells and animalculæ tanks for the gas microscope will be found to be excellent for this purpose. After being cut in small squares of the size desired ($2\frac{1}{2}$ by $2\frac{1}{2}$, and $3\frac{1}{4}$ by $3\frac{1}{4}$, I have found answer nearly every purpose), a square should be flowed on one side, in the same manner as when coating a plate with collodion, with a solution of the colouring agent in amyl-acetate collodion. The colouring agent may be either "aurine" for orange red, or any other colouring matter desired, provided it is soluble in the varnish. For the yellow screen I am in the habit of using an aniline dye, called "golden yellow," in the proportion of from five to eight grains of the dye to the fluid ounce of varnish, according to the depth of tint desired. It is permanent, does not fade to any extent, and gives a rich lemon-yellow screen. The amyl-acetate collodion, now extensively used in the United States for the purpose of lacquering gas fixtures and brass work of all kinds, is known in trade by a number of different fictitious names, such as "Enameline," etc., etc. It is simply a solution of soluble nitro-cellulose in mixtures of amyl-acetate, ether, petroleum benzine, and alcohol, mixed in varying proportions. It can be easily prepared on a small scale by cleaning off the emulsion from a spoiled celluloid film, cutting the film up in small strips (soaking them well in strong alcohol to remove the camphor), and placing these in a bottle with a mixture of one part amyl-acetate, one part petroleum benzin, three parts alcohol, and three parts ether, all by measure. The celluloid swells up and dissolves rather slowly, hence the bottle containing the mixture should be well shaken at intervals for several days. A better collodion is made, however, by dissolving good nitro-cellulose in the above mixture. When the celluloid is all dissolved, the liquid should be filtered through a little absorbent cotton to remove any loose flecks of dirt. This varnish gives a tough film, clear and free from transversed striæ, and is also an excellent material for varnishing glass negatives or positives, being perfectly waterproof. To resume, the glass square, after having been coated with the coloured varnish, is allowed to "set" for a few moments, and then placed aside on a flat surface until the varnish is perfectly hard and dry. Care must be taken to keep it covered while drying, so as to avoid dust and dirt settling on it. The coated plate is now placed on a level surface, film upward and sufficient pure Canada balsam (white and free from dirt) poured on the plate to make a pool in the middle of the plate of about one-fourth of its area. A fresh, clean glass square of the same size is next taken, and gently lowered on the balsam and plate in the same manner that a cover glass is placed on a microscopic object, and then a gentle and even pressure applied until all air is forced out, and the two glass surfaces are cemented together with the balsam, and are in uniform contact. The cemented plates are now laid aside on a flat surface, and allowed to remain several weeks undisturbed until the balsam has thoroughly hardened. Then the edges are cleaned off, the exuded balsam being removed with a little benzin or benzole, and the edges bound with some strips of lantern slide paper. This colour screen can be placed either before or behind the lens. If before, a special hood for each lens must be made to hold it. I, therefore, prefer to use it *behind* the lens, on the inside of the lens board, when it can be placed or removed in a few seconds. This can easily be arranged with two small brass or wooden cleats, secured down on the inside face of the lens board, and adjusted so that the colour screen can slide between them.

The next item is the subject. It is hardly necessary to say that moving objects and all instantaneous work are entirely beyond the scope of the colour screen, owing to the length of exposure required. Moving clouds can often be satisfactorily photographed when the motion is slow, and the exposure made with the full aperture of the lens, from half to two seconds being generally sufficient. Large masses of cumulus clouds, and also the lighter and more graceful forms of the cirrus, can be made, when at rest, to repeat themselves on the photographic plate with rare fidelity by the aid of the colour screen. There are many days of the year when these remain almost quiescent in the sky, and, as no great stopping down of the lens is needed, a large aperture and short exposure will yield excellent results.

For ordinary landscape work in close proximity to the subject the use of the colour screen is unnecessary, unless some special conditions of colour exist. Still life, fruit and flower subjects, however, are especially fruitful fields for the colour screen in conjunction with the orthochromatic plate. Here time is of no importance, absolute sharpness and fidelity of detail can be secured by stopping down the lens, and, with a full exposure, every feature of the object will be reproduced. The principal use of the colour screen in landscape photography, however, is in field work, especially where extended country, and often extreme distance are concerned. Here the colour screen is an *absolute necessity* in order to secure uniform and satisfactory results. I have photographs in my collection taken from the summit of the Furca Pass in Switzerland, where, while the foreground is harmonious and full of detail, the Alps of the Mont Blanc and Monte Rosa group are distinctly visible, although at least sixty miles distant. I have also noticed the use of the colour screen, when photographing in both Switzerland and Norway, has given much more brilliancy to the dull monotone so often noticed in the photographic rendition of long stretches of bare mountain side, it seeming to differentiate and accentuate the different tones of browns dark grey, and greens so prominent in such landscapes. In fact, I have grown to rely so much upon the colour screen in photographing these extended views, that I fear no landscape, no matter how extended, provided it is properly lighted, and I think I can show as satisfactory results for such subjects as it is possible to compress into the limits of a small photographic plate.

A word may also be said just here in favour of the use of celluloid films. Glass is as yet undoubtedly the most perfect medium of support for the photographic emulsion. But it is heavy, liable to break, and for distant landscape work apt to show halation. This latter, it is true, can greatly be prevented by backing the plate, but it is a tedious, dirty process, and involves infinite trouble. Celluloid, as now prepared in the United States, is rapidly taking the place of glass for tourists' work. It is now manufactured almost free from defects, and is so light and portable that a gross of 8 by 10 size will take up no more room and weigh no more than one dozen of the same size of glass plates. It cannot be broken, and, moreover, is almost entirely free from halation, owing to the thinness of the film and the consequent absence of reflecting surfaces. To illustrate its advantages, I may say that last summer I took a three months' trip through Norway, carrying with me, in a small Norwegian trunk, together with my clothing, sufficient material for six hundred 8 by 10 exposures. The weight of these films was about thirty pounds; the same amount of glass plates would have weighed over four hundred pounds — an almost insurmountable burden, unless one travelled with a baggage train.

It remains to say a few words concerning exposure and development. Exposures for orthochromatic plates should *always* be fully timed to secure soft and harmonious negatives. An under-exposed orthochromatic plate or film is much more inclined to fog on development, and is much more harsh and lacking in detail than an ordinary plate of the same speed would be if subject to the same conditions. On the other hand, the orthochromatic plate, and even more so the film, will bear an amount of over-timing which would simply be ruinous to an ordinary plate. When a colour screen is used the exposure should be prolonged eight or ten times, and my friend Mr. F. E. Ives, who is world celebrated for his researches in colour photography, has assured me that twenty times is none too much. I have no doubt some advocates of rapid exposures will be shocked by this statement, but when we consider the retarding effect of the colour screen, the amount of "leeway" in exposure is in consequence immensely extended. In all such work plenty of time in exposure is necessary to obtain full detail. The distance will take care of itself, so will the clouds, and unless there is a brisk wind blowing they will show up all right in the negative. Furthermore, in overcast and cloudy weather, exposures on orthochromatic emulsions, either with or without a colour screen, must be greatly lengthened, much more so than for ordinary emulsions under the same circumstances. For instance, if I gave two or three times the exposure (using an ordinary plate) on an overcast day that I would on a bright, clear day, for an orthochromatic plate (using no colour screen) I should give from *four* to *eight* times the exposure, and if I did not do so, I should get an under-timed plate. If a colour screen is used in addition, the exposure should be increased proportionately as previously mentioned. Most of my failures with the colour screen and orthochromatic film have been from this cause—under-timing on cloudy days. There seems to be, under these circumstances, an absence of certain light rays in the atmosphere (yellow perhaps) which ordinarily affect more quickly the orthochromatic emulsion. After I discovered this I have frequently, after making an exposure, the time of which I had judged should be ample, made a duplicate exposure, in which for purposes of experiment I doubled the exposure, and almost invariably the longer-timed negative came out the best.

Finally, a word or two may be said regarding the development of the exposed plate or film. The developer used must depend largely upon the purposes for which the negative is to be used. If for bromides, lantern-slides, or transparencies, my preference is for the mixed developer of eikonogen and hydroquinone, it giving negatives possessing the full detail and quick printing qualities especially requisite. For platinotype, plain silver, and kalitype, I am growing to believe that pyro gives perhaps better results. The steel or blue-grey image produced by the mixed developer gives a density which seems greater than in fact it really is, and in printing processes which tend to diminish contrast it will not give as brilliant and "plucky" a print as will the slightly yellowed pyro-developed negative.

Toning Gelatino-Chloride Paper.

HAVING had numerous enquiries on the subject of toning the Ilford P.O.P., we approached Mr. John Howson with the idea of obtaining from him his views on this subject, which he embodies in the following notes:—

"The use of this paper is spreading so rapidly and so widely that we need not be surprised at the small crop of queries as to failures in its use, inevitable in any new or partly new process. These failures are for the most part in the toning, and, after more than twelve months' experience, I may be in a position to point out in a few sentences the cause of them.

"For the most part they are thus described:—

"(1) Slowness of toning, an hour being sometimes necessary to obtain any approach to complete toning, the result being poor and faded-looking, and is in time accompanied by the symptoms mentioned in the second kind of failures.

"(2) Yellowish-pink stains in the half-tones, and more especially round the edges of vignettes.

"An apparent toning which disappears in the fixing bath, and leaves a sickly yellowish-red print.

"Now I venture to assert most emphatically that all these three failures are due to the several stages of one cause, viz., the lack of gold; and I have proved the truth of this assertion by actual tests, which have produced the several defective results just as I wanted them.

"It may be premised here that gelatine paper requires considerably more gold than albumen paper did, and this may be taken as an enormous advantage in regard to the question of permanency; for the more gold, within reason, that is deposited on a print the more stable will be that print, and the more certain to withstand any injurious influences that it may meet with in its after life.

"I know from much experience that the Ilford P.O.P. formula, containing 2 grains gold chloride, 30 grains sulphocyanide, and 16 ounces of water, will tone readily and perfectly one sheet of Ilford paper, but that the bath will then be practically exhausted. In some cases where the prints have a large proportion of heavy shadows, this bath will need an addition of a little gold to complete the toning within a reasonable time. *I would here say that experience has modified our first opinion on this point of addition of gold, and that no injurious action or result is likely to arise from it.*

"In proportion as the gold is exhausted do we get the three degrees of failures noted, in the order in which they are given. If the gold is only a little more than half gone, the toning becomes slower and slower, and the longer the prints are in the bath the poorer and less bright are the resulting tones and the image. Then come the yellowish-pink stains in the half-tones. Finally, when all the gold is gone, we get an apparent toning *on the surface*, and such prints turn yellow in the fixing bath. This last defect can only occur when the photographer neglects the instructions to judge his prints *by looking through them*, for when the bath is in this condition he would at once see that the prints when looked through retained all their original warmth of colour, and were not toning at all.

"When the toning bath is working properly the prints will on the surface appear *over-toned*, and be a bluish purple, and toning be complete in, at the most, ten minutes.

"The prime cause of these troubles may arise in one or two ways, either exhaustion of the gold by actual consumption and deposition on the prints as above indicated, or by precipitation from the presence of impurities in the bath, such as dirty bottles or dishes, impurities in the water or in the sulphocyanide. If the gold is simply used up, the bath may be replenished, as mentioned above, by the addition of more gold, in the same proportion as when the bath is first made up; but if it is due to precipitation, the bath is useless and should be at once thrown away and a new one made, taking care to avoid the same evil again.

"If these points are borne in mind, I state most emphatically that the toning of Ilford P.O.P. presents an absolute immunity from failure, and if any one does fail I shall be more than pleased to receive specimen prints and tone them in exact accordance with the formula, and return them to the senders.

"There are one or two general remarks which may be made with advantage. First, as to sulphocyanide: If care is taken to obtain it from photographic chemists or dealers there is little chance of its being impure. It is best kept in a solution of known strength and the gold added as wanted. Experience has taught us that it is not at all objectionable to make it up and use it at once; it is unnecessary to make it twenty-four hours before use."

(J. Hendrik, in a note to the *Chemical News* last year, pointed out that one sample of sulphocyanide examined by him contained only 31 per cent. of sulphocyanide, the remainder being chloride of potassium. Mr. Howson's suggestion as to keeping this salt in a solution of known strength is well worth adoption by everyone. A stock bottle of sulphocyanide of potassium or ammonium once opened absorbs moisture very rapidly, and the stock soon becomes a pasty semi-liquid mass.)

"The Ilford paper, as a rule, prints out purple, and another slight modification of the original instructions may be mentioned, viz., that the prints do lose somewhat in the toning, etc., and should be therefore a little over-printed.

"During damp weather, or if the paper is allowed to be damp at all before or during printing, the colour of the image becomes red, and if the damp is unequally distributed, it will give patchy prints. If these prints are printed a little deeper than usual, and toned in a bath rich in gold to a deep purple, this unevenness will entirely disappear.

"The richer and darker the tones required, the more gold must the bath contain. This is, of course, a point well understood in connection with albumen paper; and in this connection reference may be made to the toning bath recently mentioned by Mr. Welford, who recommends 4 gr. of gold to 6 oz. of water. This is five times as much gold as used in the Ilford formula, and would naturally produce darker toned prints. I may add that the same excess of gold acts just as well with the Ilford sulphocyanide (30 gr.) bath, and that this bath has the additional advantage in that it will keep, which is not the case with Mr. Welford's bicarbonate bath."

(Mr. Welford's formula is:—

Chloride of gold	4 gr.
Bicarbonate of soda	90 „
Water	6 oz.

and he claims for this bath the following advantages:—"The bath is made at time of use, is very simple, tones quicker than any other, no uneven toning, overtoning impossible, and gives a

pleasing grey-black tone. We would remark that in our hands this bath is far too vigorous, and that making the total volume of the bath measure 9 oz. improves by slowing its action.)

"Beyond the defects and their causes which I have mentioned, there are, of course, those arising from sheer carelessness, such as contaminated dishes or fingers, or hypo or dirt stains on the prints before or during toning, but it is unnecessary to dwell on these, as such defects are usually readily traced to their true cause.

"Absolute defects in the paper itself are very rare, but do, of course, occur in a few instances, and they also are readily recognised. There are, for instance, small round spots which print out red and tone white, such as are caused by minute specks of iron in the actual paper. These spots do not, I think, exist in the present Ilford paper, though sometimes found in that we have discarded some months ago. Another defect in the paper is the presence of a narrow, straight band across the paper of deep purple, accompanied by a similar band of light red. This defect is rarer still, and one I have not seen for many weeks. If it should occur, the paper should be returned, and will be exchanged.

"I have only to say further that the remainder of our instructions should be strictly adhered to, if the greatest success is to be attained with the least trouble. We have probably more experience of the paper than any individual, and at the same time we have the greatest interest in making its use simple and popular, and our experience may therefore be relied on as pointing the best means of use.

"Impure hypo may cause stains or yellowness when the print is in the fixing bath, and such hypo should be at once discarded and new obtained. It is almost useless to attempt to doctor it."

In addition to the above notes by Mr. Howson, we would suggest the following as also conducive to absence of failures:—

In washing the prints prior to toning, it is absolutely essential to change the first washing water as quickly as possible, otherwise a distinct yellow tinge is imparted to the paper and gelatine.

When using the simple sulphocyanide bath recommended by the makers of the P.O.P., it is just as well to bear in mind that all samples of chloride of gold are not neutral, and it is advisable to make the solution of gold distinctly alkaline. Our method of using this bath is as follows:—To dissolve the gold in, say, 2 oz. of water, add 30 or 40 gr. of bicarbonate of soda, stir well, and add to the sulphocyanide dissolved in the 14 oz. of water. Many operators do not wash their prints before toning, but this is liable to cause sulphur toning, as most papers, and we believe the P.O.P. also, contain free acid, which, introduced into the toning bath, would cause decomposition of the sulphocyanide.

This paper may be used with any of the combined baths, but for information on this point, see pages 12 and 22 of our issues of July 1 and 8. We have so often warned our readers against the use of plain alum solution that it seems almost unnecessary to refer to it again, but the alkaline chrome alum solution recommended by Dr. F. Stolze should alone be used for chloride papers. This is prepared by dissolving five parts of chrome alum in 100 parts of water, and adding solution of ammonia drop by drop till on shaking a permanent cloudiness is formed. The solution is then ready for use after filtration.

The "Barnet" Dry Plate Factory.

Situate about half-an-hour's run from the very centre of the City on what may be considered a continuation of the Highgate heights High Barnet is a place well worth visiting. Although so near London, one loses entirely all the smoke and grime, and the day we visited Messrs. Elliott and Son's factory was perfect in weather, a magnificent sky, plenty of sunshine, and a pleasant breeze to temper the great heat.

We were met at the station by Mr. Birt Acres, the Manager, and after a few minutes' walk reached the factory, which from the outside presents a very pretty appearance, the frontage of the two houses being gay with flowers of all sorts. Certainly one would never suppose that behind this charming exterior so much business was carried on.

Our first visit was to the glass cleaning department, where we found several hands busily engaged in washing the glass subsequently to be coated with emulsion. After cleaning and drying, the glass is carefully examined for faulty cutting and defects, and from an examination of several stacks of glass, we were astonished to see how even and regular it was in thickness, and how scrupulously clean.

In the emulsion making room we were introduced to Mr. Hubert Elliott, the head of this department, who kindly explained the process of mixing and cooking the emulsion, this latter process being conducted in special ware jars, which are placed in a series of water baths, which are heated by means of gas. Here we need hardly state that the room was rather darkness visible than light, but after entering the room where the emulsion is washed, which was absolutely without light of any kind, we came to the conclusion the emulsion making room was well lit.

No special arrangements had been made for our visit, but as the demand for the Barnet plates has increased so much, we were able to see every part of the business in full swing, so that on our entering the coating room we were able to see the coating machine, one of Cadett's, in operation. With this machine the emulsion is brought up to a given temperature by the aid of a steam jacket, and is then fed into a silver trough, also steam jacketted; from this trough the fluid emulsion is pumped by a series of silver pumps, which are geared so as to work at any given speed, and any number of these pumps may be used so as to correspond with the size of the plate to be coated. The emulsion flows over a silver roller, and from this just the requisite quantity of emulsion is evenly distributed over the surface of the glass.

The glass as it is fed on to the travelling bed of the machine lies edge to edge, but after coating it passes over a series of rollers by means of which the plates are slightly separated; then the backs are mechanically cleaned, and the plates pass on over the endless bands, which work in ice-cold water, which just touches the underneath surface of the glass, thus thoroughly setting the emulsion by the time the plates reach the end of the machine, where they are canted up, so that the machine minder may lift them on to the racks, which when full are transported by a lift to the drying room, which is kept at an even temperature by means of filtered air, drawn through the rooms by a series of exhaust fans.

As soon as dry the plates are taken to the packing room; here each plate is very carefully examined for defects, and no matter how small the defect, the merciless examiner condemns it, for, as we were informed, "It is only by such extreme care and ruthless throwing out of defaulters, our firm has made its reputation for the uniformity and excellence of our plates."

From the packing room we pass to the stock rooms, where we were informed that a very small stock at present remained, so great has been the demand for Barnet plates this season.

Thence to the testing department, and here let us at once say we were much struck with the method adopted. We found no useless sensitometer, but two plates, one of known quality and one to be tested, are placed in a camera side by side, fitted with accurately paired lenses; they are then exposed simultaneously to the same light and on the same subject, and then together developed and fixed. Nor is the developing done with pyro and ammonia only, but pyro soda is also used.

The building throughout can be heated with steam pipes and kept at an even temperature without the use of a naked light or fire. Wherever necessary, double doors are provided, to which a very ingenious arrangement, devised by Mr. Birt Acres, is fitted, by means of which it is impossible to open one door without the other being shut. We have now, with the exception of the stock rooms where raw material is kept, described the whole of the building devoted to plate making, but perhaps an equally, if not more interesting portion of the factory has yet to be visited; this is the printing and enlarging department.

Messrs. Elliott and Son are perhaps the largest trade printers in England. Silver, bromide, platinotype, and carbon, both small and large, are undertaken, and possibly many of our readers are possessors of work done by this firm, though they may not know it, as Messrs. Elliott and Son print largely for amateurs through dealers.

The silver department was first visited. Here we find huge stocks of albumenised paper, next door the sensitising department, and outside, in the open air, table after table covered with printing frames, whilst, in wet weather, galleries at the top of the buildings are used for this purpose. To the toning-room we next turn, and here we see the head of this department busy with about six dozen prints at once in his toning-bath. On our asking whether blisters were ever met with, this gentleman said, "Well, sir, I had a few in the winter, but I never get them in the summer," and on our asking for his remedy, which would be of interest to our readers, he said, "Tell them to keep all their solutions at one temperature, and they won't get blisters."

In the platinotype department we see evidences of plenty of work going on here; but the most interesting of all the printing departments is that devoted to carbon printing, of which Messrs. Elliott make a great speciality, and show some very fine results.

First in "the kitchen" we see the grinding of the pigments, then the preparation of the pigmented gelatine and the coating of the paper, and finally we go to the developing room. Here we find

several men at work, and one busy on a print measuring 34 by 44 in., a size which would probably frighten some of our readers if they were called upon to handle, but which does not seem to be out of the usual here. Opals, opalines, oval, round, and square plaques are also to be seen, and, in fact, carbon prints in every size, stage, and finish.

The bromide enlarging department is next visited. Here we see a bromide print exposed and developed, and then next door the making of enlarged and reversed negatives. We waited while one negative was enlarged and developed, and on our remarking, "That's a decent sized plate—what is it?" we were gravely informed, "Oh no, sir! this is only a small plate, only 24 by 18 in." We were later shown some large, or what they call large plates, measuring 36 by 48 in. One of the most striking features is the sensitising bath for large plates, which is of special construction and very ingenious.

Other departments we visited were for the mounting, spotting, and finishing of prints, where, as in the others, system and careful business management are evident.

The factory of Messrs. Elliott and Son is well worth a visit, and we have endeavoured to give some little idea of what we saw there in the above description. We finally took our leave bringing away with us some of the Barnet plates for our own trial, of the results of which we shall hope to say a word or two in a week or so.

Holiday Resorts and Photographic Haunts.

GLOUCESTER AND NEIGHBOURHOOD.

By W. H. H.

THE lover of architectural photography will find much to interest and please in this old city and the surrounding neighbourhood. Gloucester also has the advantage of being a great railway centre, easy of access, and affording a large number of excursions within easy reach. The cathedral is the first attraction. The exterior is difficult to make a picture of, owing to the rather confined situation; the choir also is of considerably greater height than the nave, giving the building a somewhat humpbacked appearance. The tower is a magnificent structure, one of the finest in the country, and the beautiful south porch should also be noted. A good view, almost the only one, is obtained from the north-west corner of the Close (just by the old gate) in early spring. Later, this view is greatly obstructed by trees, though even then a good view of the tower can be obtaineds Notice also the picturesque deanery, the prior's house of the old abbey, and the memorial to Hooper the martyr. The interior is most interesting; few cathedrals being richer in detail. First we have the grand Norman nave; the fine perpendicular choir; the highly interesting Norman ambulatory, one of the very few surviving; the lady chapel, St. Paul's Chapel, the reliquary, the tombs of King Edward II., Osric of Northumbria (founder of the abbey), Duke Robert of Normandy, and the beautiful Morley monument, by Flaxman; last, but by no means least, the exquisite cloisters, with their splendid fan-vaulted roofs. Permission to photograph is readily granted by the Dean (Dr. Spence), which, to prevent disappointment, should be obtained beforehand. (I may as well here state that all cathedrals require permits from the Deans before any photography can be allowed in them. The vergers have no authority to grant permission. The only exception is York Minster, where permits are issued by the Chapter Clerk). The town itself has not much of interest, being old without being over-picturesque. The adventurous photographer who mounts to the top of St. John's church tower will be rewarded with a fine general view of the cathedral; there are also one or two distant views to be had from the Severn banks, though generally marred by ugly railway viaducts in the foreground. The surrounding country is very full of interest; there are Tewkesbury Abbey and town, worth a long day, Malvern, Worcester, Cheltenham and Leckhampton, Cirencester, Stroud and Brimscombe, Hereford, Ross, Tintern and Chepstow, Bristol and Clifton, and Berkeley. All these are easily reached by rail, and are within the limits of a day's excursion. The tourist will find plenty of good hotels at Gloucester, to suit all purses. Enough has been said to show that a holiday could pleasantly and profitably be spent in this old town on the Severn. Though on photography intent, the attractions of Severn salmon and Gloucester cheeses need not be overlooked.

The Society's Standards.

THE Standards adopted by the Society in 1881 have been carefully reconsidered to see what additions or modifications were desirable.

The following statement is complete so far as the subjects it deals with are concerned:—

LENS DIAPHRAGMS.

It is recommended:—

1st.—That the aperture of the standard-unit diaphragm have a diameter equal to one-fourth the equivalent focal length of the lens.

2nd.—That diaphragms with smaller openings have apertures diminishing in area to the extent of one-half from the unit standard downwards.

3rd.—That every diaphragm be marked with its intensity ratio, and also with the relation that the diameter of its aperture bears to the equivalent focal length of the lens, thus:—

$$1\,\frac{f}{4};\quad 2\,\frac{f}{5{\cdot}6};\quad 4\,\frac{f}{8};\quad 8\,\frac{f}{11{\cdot}3};\quad 16\,\frac{f}{16};\quad 32\,\frac{f}{22{\cdot}6};\quad 64\,\frac{f}{32};$$

$$128\,\frac{f}{45{\cdot}2};\quad 256\,\frac{f}{64};\quad \text{etc.}$$

Should a lens not admit of a diaphragm with an aperture as large in diameter as one-fourth its focal length, nor exactly any one of the above-mentioned sizes, it is still recommended that all the apertures be made in uniformity with the above scale, with the exception of the largest, which should be marked with the number its area requires in relation to the unit diaphragm. In the case of a lens having a working aperture exceeding in diameter one-fourth its focal length, the diaphragms should be marked according to the sizes of their relative apertures, for example:—

$$0{\cdot}5\,\frac{f}{2{\cdot}8};\quad 0{\cdot}25\,\frac{f}{2},\ \text{etc.}$$

And diaphragms which require to be made with apertures intermediate to the standard sizes should be marked in a corresponding manner.

LENS MOUNTS AND FITTINGS.

It is recommended:—

1st.—That the equivalent focal length of each lens be engraved upon its mount.

2nd.—That the following series of screws for photographic lens flange-fittings be adopted:—

Diameter in inches.	No. of threads per inch.	Core diameter in inches.
1	24	·9466
1·25	24	1·1966
1·5	24	1·4466
1·75	24	1·6966
2	24	1·9466
2·25	24	2·1966
2·5	24	2·4466
3	24	2·9466
3·5	12	3·3933
4	12	3·8933
5	12	4·8933
And upwards, advancing by inches.	12	

The form of thread is that known as Whitworth's Angular Thread, and is designed as follows:—

Two parallel lines, at a distance apart equal to 0·96 of the screw pitch, are intersected by lines inclined to each other at fifty-five degrees. One-sixth of the vertical height of the triangular spaces so obtained is rounded off both at the top and bottom, leaving the form of the screw thread. The depth of this thread is 0·64 of the screw pitch.

3rd.—That every flange and adapter have a mark upon its front to indicate the position of the diaphragm slot or index of any lens when screwed home. The mark on any adapter should coincide with the mark upon any flange into which it is screwed. This mark should be placed at the point at which the thread becomes complete at the shoulder of the flange or adapter.

CAMERA SCREWS.

It is recommended:—That all screws fitted to cameras either fo attachment to the stand, for fixing rising fronts, or for other movabl

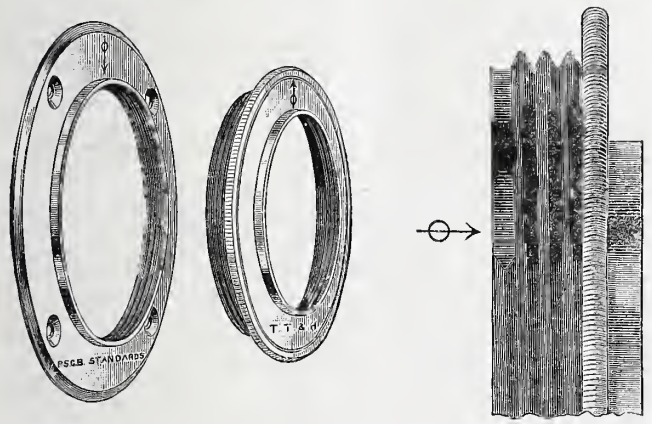
parts, be either $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, or $\frac{3}{8}$ of an inch in external diameter, and in pitch of thread and other details in accordance with the generally recognised Whitworth standards for these sizes.

The above is an extract from the *Journal of the Photographic Society of Great Britain*, and forms a fitting prologue to a recent improvement introduced by Messrs. Taylor, Taylor, and Hobson, of Leicester.

It is no uncommon thing to see a worker try for two or three minutes to screw a lens into a flange, and it requires considerable knack to be able to start the usual form of screw at once, from the difficulty of knowing at what point in the revolution the threads first engage, and the difficulty of holding the screws in correct relation axially.

Messrs. Taylor, Taylor, and Hobson's invention entirely meets this difficulty. In order to describe it fully it is necessary to refer to the system designed by them for providing that all lenses fitting the same flange are held with their diaphragm indexes or other fittings in one uniform convenient position. The present invention is a supplement of that system.

By arranging that the threads of male flange screws upon lens mounts should terminate at their shoulders in one uniform position in relation to the diaphragm indexes, it was provided that they might all screw home with their diaphragm indexes in one convenient position. In the present invention, by arranging that the threads commence abruptly in a similar uniform position in both male and female screws, it is provided that any lens when presented to its flange with its diaphragm index uppermost, or as it is arranged to be used, is in position, on being turned, to at once engage with the screw of the flange.



The illustrations show a Standard flange and an adapter in the position of rotation at which the screws would immediately engage on being turned. This position is shown by the zero marks, which would again coincide when the flange and adapter have been screwed together. In the same way any properly constructed lens would screw into the flange or adapter; its diaphragm index being at zero at the commencement and completion of the engagement.

So far it has been shown how this invention decides at what part of their revolution the screws shall first engage. The enlarged portion of a Standard adapter seen in the illustration exhibits the manner of forming the male screw thread to commence abruptly near the zero, and it will be understood that both the internal and external screws are formed similarly in this respect.

The common practice of merely chamfering or bevelling the ends of screws, which leaves the threads to terminate, not abruptly, but to die away gradually in the course of revolution, not only makes it difficult to find the position for first engagement of the screws, but by forming the chamfers into a kind of ball and socket, makes it hard to determine their correct position axially.

It will be seen that this method of removing this usually incomplete portion of a thread, and forming a cylinder at its root, provides a clear shoulder and bearing which determines the true axial relation of screws when placed together for engagement.

For convenience and uniformity the zero of a screw and its abrupt commencement are at that part of the revolution at which the point of a tool cutting the female screw would lie in the plane of its face or shoulder.

It must be borne in mind, however, that this applies only to a screw of absolutely correct size and form, for any error in the dimensions of a screw would cause corresponding displacement of its true zero.

For some time past, in view of the importance of accuracy in these matters, Messrs. Taylor, Taylor, and Hobson have given attention toward the improvement of appliances for making and measuring screws, with the result that they now prepare all screwed fittings within a limit of error of one-thousandth part of an inch on their diameter, and confine the error on that side of the normal which secures perfect and *free* interchangeability.

The standard 2 inch lens flange and 2 to 1·5 inch standard adapter forwarded as a specimen of this improvement immediately strike one by their perfection of finish and the ease with which the adapter is screwed into the flange. Whilst standards of sensitiveness, of light, etc., are essentially important, none less so are the standards of screw and camera fittings, and we hope that this the latest improvement will find universal adoption by the photographic world, so that one may on purchasing a new lens, of whatever make, know that at once it will fit a given flange or adapter.

Harmonising Harsh Negatives.

(*Continued from page* 146.)

It follows that only in a few exceptional cases the compression of the whole scale within the limits of our process will yield satisfactory results. A practical difficulty will also be found in gauging in the dark-room, during the process of development, the exact amount of compression necessary. The introduction of two scales into the composition, or the compression of one end of the scale, will be found more generally useful and pleasing. Reduction or intensification will effect the latter result.

The intensification of a flat negative showing too compressed a scale will show a result somewhat as if a darkish print had been made from the negative in its original state, and the lights put in with white crayon; or when the negative happens to be dense as well as flat, relief may be obtained by clearing out the shadows with a reducing agent. If this be crisply done, the result will be as if a light print had been taken from the negative in its original state, and the shadows strengthened with black crayon. If these methods be applied locally, two scales are shown in the print; if applied generally, the effect is that of compressing one end of the scale, and rendering the other more fully. For some classes of subjects these methods will yield pleasing results.

In the case of harsh negatives, where the shadow detail is already too thin and the lights too dense, neither of these methods is quite satisfactory. In attempting to reduce the high-lights which penetrate through the film to the support, it will only be by the exercise of an amount of manual dexterity not usually possessed by an amateur, and then at the expense of a vast amount of time and patience, that we can avoid clearing away the shadow detail lying on the surface of the film when the light and shadow are intimately mingled.

When the lights and shadows are in masses and soften into each other, the lights may be satisfactorily reduced by means of Mr. Howard Farmer's reducer (hypo and ferricyanide of potassium) applied by a sponge. A member of our Society, Mr. Beadle, is very skilful in the use of this agent, and has kindly lent me some prints from negatives before and after reduction, which I pass round for inspection. In the prints of the chapel interior you will note the great improvement in the columns, font, and the wall upon which the light falls so strongly. In the landscape you will note how charmingly the distance prints out from the reduced negative.

The difficulty in using this method is to avoid reducing the shadow detail adjacent to the lights, and to avoid a patchy appearance due to unequal reduction. The same remark will apply still more strongly to the use of spirit applied with wash-leather, as some pressure has to be applied, and if the portions to be reduced are at all large the difficulties become very great. I have never seen an instance of a large portion of a negative reduced with spirit without patchiness appearing, generally accompanied by a smeary effect.

It is not necessary for me to give here formulæ for the many intensifiers and reducers extant, each of which has its own advantages for special purposes. A full list of these with useful comments and explanations will be found in the admirable paper read before our Society last year by Mr. Roland Whiting. I may, however, call your attention to one which has been referred to lately at some of the Societies. The formula as given by Mr. Teape at the London and Provincial is:—

Bichromate of potassium, saturated solution ..	1 drm.
Sulphuric acid	1 „
Water	8 oz.

This is a stock solution to be diluted for use according to the purpose for which it is required. For instance, if it is only necessary to clear away a slight surface fog before intensification it should be diluted to a pale lemon tint. When dense negatives have to be reduced, a stronger solution may be used. I have found it speedy, and when applied to the whole surface of the negative in a bath regular in its action. The effect is visible during the operation, and as hypo is not used a lesser amount of washing is necessary that when that useful but troublesome chemical is employed. (*To be continued.*)

Apparatus.

AMIDOL.

IN our issue of June 10th we gave a translation of a note by Dr. Eder on the above new developing agent, which has now been introduced into England by FUERST BROS, of 17, Philpot Lane, E.C. We have had this under trial now for nearly three weeks, both for time and instantaneous exposures.

The solution recommended by Dr. Eder is:—

Amidol	5 parts.
Sodium sulphite	50 „
Distilled water	1,000 „

Snap-shots developed in this solution gave us very good negatives. The image appears almost instantaneously, even with extremely short exposures, and gives them the appearance of over-exposure, but on allowing development to continue we found we had some very good negatives with full printing density. The colour of the negatives is a fine greyish black, much resembling the image given by Eikonogen.

Tested against pyro and ammonia, we found that it would give softer negatives, quite as full of detail, but without the slightest sign of fog, an advantage which will be of great service in snap-shot work. In time exposures, where over-exposure was known to exist, we found the addition of about one grain of bromide of potassium to every ounce of developer was an advantage. As accelerator a solution of sodium sulphite was used as recommended by Eder, with very good results.

Amidol is a developer which we think likely to be of considerable service, and we shall continue our experiments, trying it for bromide paper and lantern slides.

The following reports by Messrs. Spiller and Addenbrooke are also of interest.

Mr. J. Spiller says, "I have now made a considerable number of experiments with the two new developers, and reserving the *Metol* for future report, I may say at once that the *Amidol*, as tried upon six different qualities of commercial plates, has given me eminently satisfactory results. It is easy of application, and possesses special properties which will recommend it to the notice both of professional and amateur photographers.

"The fact that it can be used in a sulphite solution alone, *without any admixture of free alkali*, is an important consideration in its favour, and thus dissolved, it is sufficiently permanent to serve as a one-solution developer, being diluted for use with three or four times its bulk of water immediately before employment. The stock solution, in concentrated form, was made up according to your instructions as follows:—

Distilled water	1,000 parts.
Sodium sulphite	200 „
Amidol	20 „

"Further diluted, as already stated, and used with a small proportion of potassium bromide as a restrainer, the images can be made to appear with any required speed and the density modified merely by altering the strength of the developer; the resulting negatives seem uniformly clear and brilliant without any trace of fog. Tourists especially would find it most convenient for general use, but they should be advised to carry always with them a small supply of potassium bromide in crystals, so as to be ready for all emergencies.

"I cannot speak too highly in praise of *Amidol* as a developer, for with it the operator has his process completely under control. I find, moreover, that it is quite easy to develop many plates in succession with the same solution, which is not the case with pyrogallol."

Mr. Addenbrooke sums up as follows: "Full printing density is attained in from three to four minutes. With thinly-coated plates it is advisable to wait until the action of the developer is strongly apparent at the back of the plate; but if the film is a thick one, the image need only just appear through. After fixation, the deposit is of a good black colour, inclining to a greenish tinge as the proportion of bromide is increased. The shadows remain quite clear, and the film perfectly free from stains."

Societies' Meetings.

Birmingham.—At the weekly social meeting held on the 23rd ult., the members assembled to welcome Miss C. W. Barnes, of New York. During the evening about fifty slides, comprising views of Birmingham, Warwick, Kenilworth, Stratford-on-Avon, Wooton-Wowan, Broom, etc., were put through the lantern by Mr. E. H. Jaques. Mr. E. C. Middleton described the different views as they appeared on the screen.—Ordinary meeting held on the 25th ult., Mr. G. F. Lyndon in the chair. Three new members were elected. Reports were read of excursions to Berkswell, Wixford, Warwick, Aston, Cantlow, and Kenilworth. Miss Barnes accompanied the members on the latter excursion. Messrs. Marion and Co. sent a sample box of dry plates for the purpose of illustrating their new system of packing, the object of which is to secure a packing perfectly non-injurious to the film. The system met with the unanimous approval of the members present. The thanks of the meeting were accorded to the Paget Prize Plate Co. for their kindness in sending a large parcel of sample boxes of their well-known dry plates for distribution amongst the members; also to the Editor of the AMATEUR PHOTOGRAPHER for a copy of "Amateur Photographer's Annual" for 1892, to the Editor of *Photography* for *Photography* reading cases, and to Messrs. Fry and Co. for a copy of A. R. Dresser's work on "Bromide Enlarging." The Chairman announced that the judge had awarded the prize offered in connection with the Development Competition held in July, to Mr. George Wilkes. The enlargements offered by the society for the best prints from negatives taken on the Berkswell and Wixford excursions were awarded to Mr. E. Underwood and Mr. Sears respectively. It was moved by Mr. E. H. Jaques and seconded by Mr. E. C. Middleton, "That the hearty congratulations of the society be offered to the President (Sir J. B. Stone) on the occasion of his receiving the honour of knighthood from the hands of Her Majesty the Queen. A discussion on "Hand-Cameras and their Work" was opened by Mr. Jaques. Messrs. Griffiths, Middleton, Sheaff, T. Taylor, Thomason, Underwood, and the Chairman took part in the discussion, which was of an extremely interesting and instructive character. Several hand-cameras were exhibited and described. Miss C. W. Barnes then delivered her paper on "American Work and Workers."

Hackney.—On the 23rd ult., Mr. Hensler presiding, Mr. Geo. Hankins nominated for membership. Members' work shown from Messrs. A. Barker, Dean, Hensler, and Sodeau. Borax recommended to be added to the toning bath for P.O.P. Mr. R. Beckett read a useful paper on the "Suitable Printing Process for a given Negative," recommending the following bromide rapid paper at great distance from light for thin negatives:—*Bromide slow paper:* Longer exposure and thicker negative. Bromides generally require a thin negative with a compressed scale of gradation. For enlarging, avoid hard or yellow negatives. The greater the distance the more latitude. Always make a test exposure. Contact printing exposure must always be exact. Ferrous oxalate developer best, half old, half fresh. *Alpha paper:* Half tones must not be too heavy. Over or well expose. Should develop red colour, can then tone all shades from red, brown, black, to blue. Developer recommended, hydroquinone with eikonogen mixed; can be used over and over again. To mount Alpha paper with polished surface, paste waterproof paper on back (black side outwards) after squeegeeing. Use glue and treacle or glue and glycerine, work up to a froth on a board, hold print in hand, dab on and off several times in the same way that boxmakers do, till sufficiently glued, and place on card mount. *Gelatino-chloride paper:* Same treatment. *Platinotype:* High lights must not be heavy; use the new cold-bath process. With this paper the delicate tones do not fix out much. *Carbon tissue:* Best for all above whole-plate. Thick pigment for thin negatives, and *vice versa*.

Leytonstone.—Special general meeting held on 24th ult., Dr. W. Pickett Turner in the chair. A proposal was brought forward from the Photographic Society of Great Britain setting forth the advantages of affiliation with them. After a discussion it was decided to become affiliated, the Secretaries being requested to take the necessary steps. Mr. A. E. Bailey next opened a discussion on the experience he had had with the Barnet plates recently distributed among the members. He had found them rather quicker than the usual run of ordinary plates, and developed up very clean and rich in silver, giving a very brilliant negative. Having passed round, some half-plate negatives taken at the club's outing at Barnet Mr. Cuffey asked the formula they had been developed with. Mr. Bailey replied, with pyro and ammonia, 10 per cent., 60 minims each; pyro, potass. bromide, and ammonia to 2 oz. Mr. Cox said he had difficulty with air bubbles. Mr. Bailey, in reply, said he had no difficulty in that direction if careful to well dust the plate and flood with water before pouring on the developer. The discussion was continued by the President, Messrs. Wates Wire, Reddick, Cox, Prockter, etc. The Hon. Secretary next introduced a new printing frame, the Bynoe, sent down by Messrs. R.

and J. Beck, which was admired on account of its simplicity and freedom from easting shadows, but most of the members were rather dubious as to the print not shifting. The Hon. Secretary undertook to test it, and report his experience. A large parcel of Paget plates received from the Paget Prize Plate Company were next distributed among the members, as were also specimen packets of the new gelatino-chloride paper of the Eastman Photographic Materials Company. The Hon. Secretary asked members to keep note of their experience of them, by them, as a discussion would be held later on as to their merits. Several other matters were gone into, and the exhibition decided to be held on November 10th, 11th, and 12th, at the Masonic Hall, Leytonstone.

Liverpool.—The ordinary monthly meeting was held on the 25th ult. The President, Mr. W. Tomkinson, occupied the chair, and there was a good attendance. Messrs. E. T. Coekerham, A. S. Clare, A. A. Vos, and H. Anderson were elected members of the Association. Mr. Marriott showed some specimens of home-made ground glass, which he explained were produced by simply taking two spoiled negatives, placing a little fine sand and water between, and grinding them together for a short time. The surface was all that could be desired either for focussing screens or any other photographic purpose. Mr. F. H. Elsby gave a demonstration on the use of the Society's enlarging and reducing camera, showing the various movements, and explaining how the exact position for any required size could easily be ascertained by means of marked rods which were provided for the purpose. For the benefit of the younger members, the President then demonstrated the development of under-exposed and over-exposed plates. Under the same conditions as to light, stop, and subject he had exposed two Castle plates, one for about one-twentieth of a seeond and the other about five seconds, and from each he now developed a very good negative. Several gentlemen gave their experience of the Paget Prize Plates and of the Eastman printing-out paper, samples of which had been distributed amongst the mem!ers. The opinions expressed were mostly favourable. The Secretary exhibited Beck's new printing frame, which enables the whole of the print to be examined at once without fear of movement. An excursion to Shrewsbury was announced to take place on Saturday.

North Middlesex.—A meeting was held on the 22nd ult. In the absence of Mr. Wall Mr. Walker took the chair. Forty-five members and friends were present. The Chairman introduced Mr. Debenham, who addressed the society upon the subject of "Transparencies by the Carbon Process." He recommended that the tissue should be bought unsensitised, and sensitised as required by this formula:—Bichromate of potassium, 1 oz.; ammonia, 1 dr.; water, 30 oz.; or, if the tissue had to be kept for some time, it would be well to increase the water to 40 oz. About three minutes' soaking would be suffieient. It should then be squeegeed on to a plate of glass (into the pores of which talc had been thoroughly rubbed), dried, and stored for use. It would strip with a bright surface, which would be in close eontact with the negative. He recommended as an actinometer that a negative of medium density should be taken, and while the carbon print was being made that a print on silver paper should be made through a small opening in a mask. He emphasised the necessity of a safe edge to the carbon print, and that the cut-out mask for that purpose should be placed outside the negative instead of between the negative and the tissue. By this means the safe edge would be vignetted off instead of showing a hard line, and there would be less risk of frilling in developing the print. It was necessary that the print when placed in the cold water prior to development should be squeegeed on to a sheet of glass before it had absorbed all the water it was capable of holding, otherwise it would be unable to take up the film of water on the glass, and close and permanent contact would not be made. Mr. Debenham illustrated his lecture by diagrams on the blackboard, and by passing round transparencies, etc., in various stages of progress. He then proceeded to develop several prints, calling attention to the precautions necessary to secure good results. Many questions were asked and answered, and a vote of thanks was moved by Mr. Marchant, who said the Society was indebted to Mr. Debenham and to the Affiliation Committee of the P. S. G. B., who had made the arrangements for the interesting and practical demonstration just delivered. Mr. Cox seconded the motion, which was carried with acclamation. The usual competition of views taken at field-days was held, the vote of merit being secured by Mr. A. G. Hewson for West Hampstead A large number of plates kindly sent by the Paget Company were distributed, each member present receiving a packet. Attention was called to the Hill-Norris dry collodion plate, particulars of which had been received. The next meeting will be held on September 12th, when Mr. H. Smith will take the chair, and Mr. Beadle will demonstrate the making of lantern slides on various plates. Visitors welcome.

Phot. Soc. of G. Britain.—Technical meeting, August 23rd, Mr. J. Traill Taylor in the chair. Samples of Amidol, the new developer and of Richards' patent corners were laid upon the table. "Portraiture other than in the Studio" being the subject for discussion, Mr. J. Nesbit passed round photographs of the Chairman, Messrs. Cowan, Dunmore, and others, which he had taken out of doors, in an angle of the walls of his house. He used a Ross' Rapid Symmetrical, and found that it gave such sharp definition as to render retouehing necessary, and called attention to two prints from the same negative, one untouched, the other after Mr. Redmond Barrett had retouched it, the latter being a very satisfactory likeness of Mr. E. Dunmore. He had opened out such a lens as mentioned to an aperture of about *f*/6. Mr. J. Weir Brown exhibited some portraits taken in an ordinary room near a double window, using a white reflector; he found it possible to avoid the duplication of the light spot in the eye by controlling the angle of the reflector. Mr. Chapman Jones had not been troubled with the secondary light spot. Mr. Debenham said the larger the reflector the less bright it might be, and the less chance there was of a second light spot. For indoor portraiture he preferred to put the sitter a little out of the full light from a window, on the other side of which, and close to the wall, is placed the camera. The reflector he would put from the camera almost up to the sitter; an arrangement whieh masses the light on the prominent part of the face. He illustrated his arrangement on the blackboard, and exhibited a number of portraits taken in that manner. In reply to Mr. Samuels he said he generally placed the reflector perpendicularly, but if of a plain white character this was immaterial. The Chairman described Solomon's system of portraiture with magnesium, which he found gave flat results. A method he had adopted was to place the sitter in front of a window with the camera on the outside. An improvement on this was to place a mirror in the window, and photograph the reflected image with a camera by the side of the sitter; the effects of lighting in this manner were very beautiful, and if the angle of reflection were not acute there was no secondary image with an ordinary looking glass. Mr. Dallmeyer remarked that the law with regard to reflections from polished surfaces held good with dead surfaces, the difference being one of degree only. The Chairman suggested the term "radiator" rather than reflector for a dead surface. After further discussion the Chairman announced that the next meeting will be held on September 27th, at 5a, Pall Mall East, and the meeting adjourned.

Richmond.—At an informal meeting held on the 26th ult., the President in the chair, Mr. G. W. Ramsay brought some fine studies of sea and cloud taken from his yacht, and some printed on rough drawing paper. Mr. Cembrano, jun., showed a copy of the Convention group taken on a whole-plate by Mr. J. Stuart, of Glasgow, which showed remarkable definition and good detail, although taken with a drop shutter and lens at *f*/12·5. The lens used was one of Zeiss's of 7¾ in. focus. Mr. Ennis had a series of experiments on toning Ilford P.O.P. paper, showing a great variety of colour from red brown to black, the first colour being obtained by one minute's toning in a combined bath, and the black by a quarter of an hour's immersion in the same bath. He further exhibited a print on the same paper, which had been exposed to sunlight during the last six weeks and one half of which had been covered with black paper; no deterioration or signs of fading were apparent. One of the members having asked which was the best way of stopping out pin-holes in a negative, Mr. Cembrano said that he used smoke black and a very finely pointed sable brush, No. 0; instead of water he preferred wetting the brush in his mouth; only the smallest amount of pigment was necessary, and in order to match the colour of the negative he would first try painting on the clear rebate of it. Mr. C. H. Davis showed Ross's divided camera with swing-back attachment. Messrs. R. and J. Beck sent for inspection the Bynoe printing frame, which has the advantage of being small, casting no shadow on the print, and enabling the operator to have a full view of same. Mr. J. B. Huddy was elected a member.

Sheffield.—At the usual monthly meeting of the Optieal Lantern Society, held on the 18th ult., Mr. Clowes (Vice-President) in the chair, Mr. Mottershaw gave a paper on "Stereoscopic Transparencies." In the first place Mr. Mottershaw explained that his negative was an ordinary half-plate, cut in two after development, the two halves transposed, and then mounted with a piece of clear glass in the same way as a lantern slide. He then demonstrated the subject by printing from a negative so prepared, two transparencies, using Cowan's chloride bromide plates, and giving exposures (by gaslight) of 3 and 5 sec. respectively. The first was developed with hydroquinone (Ilford formula), the other with rodinal 1 part to 30 of water, with the addition of a little restrainer composed of 1 part brom. pot., 3 parts rodinal, and 3 parts water. The two plates treated in this way gave very satisfactory results, but so similar that it was hard to distinguish the one from the other. To finish they would require fixing, and then mounting with a piece of fine ground-glass at back.

South London.—On 15th ult. at Hanover Hall, Hanover Park. Rye Lane, Peckkam, the President, Mr. F. W. Edwards, in the chair,

after the announcement of additions to the club library, a Newman and Guardia aluminium blind shutter, now being placed on the market, was shown by the Hon. Secretary, and was minutely examined by all the members present, and its working much admired, exposure ranging from 1-50th to 1 sec. being obtained by setting an index point. Time exposures can also be obtained. A celluloid focussing screen of the thickness of ordinary glass which Messrs. Newman and Guardia are fitting to cameras was also exhibited. Mr. H. G. Banks, one of the Vice-Presidents, then read a paper on "The Optical Lantern: its Construction and Use," during the course of which he gave a practical demonstration of the working of the lantern. In order to show the great heat generated when using the oxy-hydrogen limelight a penny was placed in the flame, and in less than a minute a hole was made through the coin.

Tunbridge Wells.—On the 27th inst. the members went by special invitation to Broomhill, the seat of Sir David Salomons, Bart., the patron of the Association. It was intended that the visit should be made on the 20th, but in consequence of the enormous amount of rain that fell the two days previous, Sir David, with his usual kind thoughtfulness for his guests, decided it was better to postpone it, and it was arranged for the 27th. The weather was threatening, but it was decided to go, and Broomhill was reached at 3 o'clock in a smart shower which turned out to be the beginning of a thorough wet afternoon, so much so that all thoughts of outdoor work were abandoned, and interiors were the order of the day. But Broomhill is one of the wonders of the district, so many extraordinary machines to be seen all worked by the electric current that the host gave a great amount of pleasure when he proposed going through the workshops, those who had been before whetting the appetite of those to whom this was a first visit. They were first conducted to the studio, the immense camera coming in for a large amount of admiration, as also several others. There is an arrangement for portrait-taking by the electric light, which is filtered through screens. A new table was being fitted up for microscopical work with a new kind of fine adjustment. One of the alterations here will be a new studio about 60 ft. long; fret saws, lathes, circular saws, milling machines, engraving and mortising machines (with the latter several stopper extractors were made and given to members), and a hammer working by electricity on the same principle as Nasmyth's steam hammer, a band saw with which a chair was made, watchmaker's lathe and tools for the very finest work possible. All these machines are fitted with lamps over, designed and patented by Sir David; they can be used in any possible way, having pulleys and weights so arranged that they will remain in position just as required; this is an important matter where particular work is being done for the light to be concentrated on any given spot. The dark-room came in for a fair share of attention; all the appliances, including the novel rocking table, the arrangement of the light underneath, and the mode of making it stand level on an uneven floor, showed wonderful skill in being well thought out. The new lens just made for Sir David is of quartz, and is supposed by experiments to be the fastest yet made; t was specially used for photographing the electric spark. A half-plate Dallmeyer extra rapid lens working at *f*/5 was shown, and an electric photo-microscopical projecting lantern made by Messrs. Newton and Co. for Sir David Salomons, also a lecturer's lantern which would throw an arrow on the screen at the very spot where the lecturer wished to draw the attention of the audience; and several lanternists were much interested by the oxy-hydrogen lantern also made by the above-named firm specially to order. He also showed an arrangement he had for registering the lenses of his triple lantern on the screen. One set of these had the frames made of wood, and the other set in gun-metal frames which were the most exact, being so made that expansion of the glass by the heat was allowed for; another was for registering slides belonging to a set, and an ingenious rule for measuring from the centre with moveable square at end. There was also a kettle for boiling water and a glue pot both heated by electricity. The engine house was next visited, where there are two gas engines of fourteen nominal and thirty indicated horse power, used for working the dynamos which charge the accumulators. A novelty here was that the engines were made to start by an electro-motor, a windlass tightening up the band which gave the start. These engines have replaced those working by steam. From the engine room is a door leading to the accumulator room where all the storage is kept for the machinery in the workshop. Tea was served in the dining room, after which the picture gallery, saloon, and sculpture room were thrown open. The time having now arrived for the return journey all too quickly, waterproofs were donned to protect the owners from the downpour of rain, all returning feeling that their patron had once more shown the great interest that he takes in the members of the Association. It should be stated that Sir David Salomons had again given the members the privilege of inviting Mr. H. P. Robinson to join the party, which gave them a great deal of pleasure to have him with them.

Uttoxeter.—On 15th ult., the members of the above Society, to the number of about twenty-four, had a most enjoyable trip to Chester. The party left Uttoxeter by the 7.30 a.m. train, and arrived at Chester about 10 o'clock, and after a ramble through Old Chester, which was much appreciated, they adjourned for lunch, after which the party embarked on board a steamer and enjoyed a voyage down the river Dee and to Eccleston Ferry, and by the kindness of the Duke of Westminster they were allowed to visit Eaton Hall and Park, and take photographs at will, which was thoroughly enjoyed by the members, who arrived home safely by the 10.30 p.m. train, having spent a very pleasant day.

Dark-Room at Oban.—Mr. Samuel Lawrence, photographic chemist, 101, George Street, Oban, has a dark-room fitted up, free to customers, and keeps a full stock of plates, chemicals, etc.

Northern Tasmanian Camera Club.—The third annual meeting was held on the 20th ult. The President (Mr. R. L. Parker) occupied the chair. After the minutes of the previous meeting had been confirmed, and some correspondence read, three new members were elected—Messrs. E. R. Ash and C. L. Hodgman, of Hobart, and Mr. C. Hart, of Launceston. The secretary then read his report, in which he stated that during the year the progress of the club had been most satisfactory, the number of members on the roll having increased from thirty-six to forty-two. The monthly meetings had been fairly attended, especially those during the latter part of the year, and those at which the optical lantern formed an important feature—at some of the latter meetings a number of visitors, including ladies, had attended. An excursion of the club for practical work in the field took place in November, the scene of operations being Ulverstone and vicinity. Three days were spent in this neighbourhood, there being a good muster of members, and some good and instructive work was accomplished. The thanks of members were heartily due to Messrs. P. C. Maxwell and John Sykes, of Latrobe, as well as to the Ulverstone Improvement Association, whose kindness made the outing all the more enjoyable. One prize competition was held during the year, subject, "Studies of Trees," in which Mr. Wm. Gibson, of Scone, took first certificate, Mr. R. L. Parker second, and Mr. Wm. Aikenhead third. Mr. S. Spurling kindly acted as judge. A second competition was announced to close on June 1st, subject, "Tasmanian Scenery," the prize being a valuable hand-camera, generously presented to the club by Mr. Wm. Gibson. Owing to bad weather very few prints were ready by the above date, and it was decided to postpone the closing of the competition until December 1st. The circulating album had been contributed to better than ever, and competition had been very keen, some of the work sent in being of a high order of merit. Messrs. Gibson, Kermode, Parker, and Styant-Browne had been successful in winning albums. The club was well represented at the Tasmanian Exhibition, a large exhibit being prepared by the united club, while several members exhibited separately. A first award was given to the club, while Dr. Room, Messrs. Parker, Kermode, and Styant-Browne all secured high awards for their exhibits. The club exhibit was afterwards presented to the Victoria Art Gallery. The optical lantern had been in good demand during the year, the loaning of it to members being much appreciated by them. The journals subscribed to by the club had been in good demand, many of the members being very regular in their application for them as a means of information and instruction. The returns of income and expenditure were given in the treasurer's statement, and a credit balance was shown; it was hoped that those members in arrears would forward their subscriptions at an early date. At the conclusion of the reading of the secretary's and treasurer's reports, office-bearers for the ensuing year were balloted for. Competition for the three vacancies on the committee was very keen, there being eight candidates. Four being equal in the first ballot, a second was taken, and the following result was arrived at:—President, Mr. William Gibson, of Scone; Vice-Presidents, Rev. A. H. Champion, Messrs. R. C. Kermode, and R. L. Parker; Hon. Secretary and Treasurer, Mr. F. Styant-Browne; Committee, Messrs. A. C. Bonner, F. Stewart, and J. Sparrow. Hearty votes of thanks were accorded to the retiring President (Mr. R. L. Parker) and to the Secretary (Mr. F. Styant-Browne) for their services during the past year. It was decided that the next album, closing September 1st, should be "General Subjects." A motion proposed by Mr. C. Nickolls was carried—"That members be asked to contribute duplicates prints to form a club album, the committee to select those suitable." A committee was formed to arrange a programme for the next six months. Mr. Gye showed an ingenious instantaneous shutter—his own invention—and an exhibition of lantern-slides closed the evening. The members of the Camera Club have reason to be well satisfied with the growing prosperity of the club, and it is expected that during the coming year the prosperity will still continue to grow, and do good work in fostering artistic instincts, and the love for the scientific and beautiful among its members, and still more spread the knowledge of the charming art-science of photography.

SOCIETIES' FIXTURES.

Sept. 2.—LEWISHAM.—"A Shilling's Worth of Photography," Mr. Thos. Child.
,, 2.—RICHMOND.—Informal Meeting.
,, 3.—PEOPLE'S PALACE.—Outing to Wanstead Park.
,, 3.—CROYDON.—Excursion to Zoological Gardens.
,, 3.—WARRINGTON.—Ramble to Higher Walton.
,, 3.—NORTHAMPTONSHIRE.—Excursion to Harleston Firs.
,, 3.—ASHTON-UNDER-LYNE.—Summer Ramble to Chester.
,, 3.—LEYTONSTONE.—Informal meeting.
Sept. 5.—SOUTH LONDON.—Lantern lecture, "Geo. Tinworth: his Life and Work," Mr. F. W. Edwards.
,, 5.—OXFORD.—Walk.
,, 6.—STAFFORDSHIRE (POTTERIES).—Paper on "Development," Mr. F. C. Powell.
,, 6.—HACKNEY.—Ordinary Meeting.
,, 6.—NORTH LONDON.—Meeting: Comparison of holiday work.
,, 8.—BIRKENHEAD.—Lantern lecture, "Around the Campagna," Mr. Geo. E. Thompson.
,, 9.—RICHMOND.—Discussion, "Improving Faulty Negatives."

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number* and *full title of the query* referred to.

QUERIES.

5800. **Printing-in Clouds.**—Can anyone tell "An Amateur" how to print in cloude? The covering over prints with black paper leaves marks between picture and clouds.—AN AMATEUR.

5801. **Foresters' Fete.**—Has any brother amateur been successful in taking one or two photographs at the above, and would he oblige me with the loan of negative or print? Address with Editor.—FORESTER.

5802 **Gibraltar.**—Will someone kindly inform me if photography is prohibited at Gibraltar?—W. B. W.

5803. **Developing.**—Will any reader inform me the reason that I am unable to develop my plates as usual? I use Ilford plates and developer according to formula on box. I have been having excellent results from this developer and platee. I use my developer as usual, but I find I cannot get any image to come out on the plate after long exposure and developing. I have added more of ammonia as developer to the plate as usual, but I cannot get a trace, and I have even added the strong liquor of ammonia to the developer without diluting, but none the better. Sometimes after long developing will find a slight trace of the image coming up, but far from printing quality, having tried several times, but found (each time the same, having mixed fresh developer from stock, but no better, and should not like to spoil more plates.—WON'T GIVE IN.

5804. **Carbonate and Washing Soda.**—Will any reader inform me if there is any difference between carbonate of soda and ordinary common washing soda? Also give formula which is given with Derwent dry plates —T. JONES.

5805. **Reducing Intensified Negative.**—I have intensified a negative with mercury and ammonia, and made it too dense. Will any reader tell me if I can reduce it without running any risk of spoiling the negative as it is valuable?—SNAEFELL.

5806. **Bleaching Prints.**—I find that slight bleaching with copper hromide has an excellent effect in brightening up flat bromide prints. If they are taken out and washed after the process, are any bad effects likely to ensue in the way of staining, fading, etc.—RETSOLG.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

July 15th.—No. 5756.
,, 22nd.—Nos. 5763, 5768.
,, 29th.—Nos. 5777, 5778.
Aug. 5th.—Nos. 5779, 5780, 5781, 5785, 5786.
,, 19th.—Nos. 5790, 5791.
,, 26th.—Nos. 5794, 5796, 5797, 5798, 5799.

ANSWERS.

5795. **Copying.**—Prints should be placed opposite a window, and camera placed in front of it, and a black or non-actinic curtain should be hung in front of the camera so as to exclude all but the top and side lights.—INQUISITIVE.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

VERAS.—The yellow stains are due, we think, to some dirt which has accidentally touched the film. You will find on another page some notes on this paper, and we should advise the combined bath suggested on page 22, July 8. If you ever use encaustic paste, a little rubbed on the glass will help you, or make the following:—

Yellow wax	..	..	..	12 gr.
,, resin	..	..	..	36 ,,
Ether	..	..	..	2 oz.

Melt the wax, add the resin and ether, pour a little of this on to the glass, rub all over and polish, and you will find it very easy to strip.

GRAHAM HARVEY.—Many thanks for your notes, which will duly appear. We shall be very glad to have others.

R. KENSEY HORNE.—Many thanks for cutting, which appears.

CARAPACHAY.—We will place the subject of your letter before a maker, and write you.

RAPID.—The shutters you name are all on totally different principles, and can therefore hardly be compared. We should advise the Thornton-Pickard.

REFLECTOR.—(1) The image reflected by M on to ground-glass will be the true image as thrown on P. (2) In practice you may disregard the thickness of the glass; on the other hand, theoretically, the two surfaces, the glass and the silver, should cause duplicate or fuzzy outlines. We have used a camera made on this principle for over two years, and never found any difficulty from the double reflection.

LIONEL THIRKELL.—The camera you name is an efficient instrument, and capable of turning out good work.

BOTANY BAY.—The most satisfactory method of washing films is to enclose them in light network frames, as sold by Adams and Co., 26, Charing Cross Road, in their "Club" washer.

EIKONOGEN.—(1) A very pleasing soft print, with distance well rendered. (2) Spoilt by the white marks in the centre, and it would have been preferable to have taken the bridge more on the slant so as to include it all. (3) Under-printed, and wants clouds. (4) Ditto. (5) Under-printed, and the poet is not artistic. (6) A great deal too black and heavy; the most artistic so far. (7) Good. (8) The halation at the top spoils this; it wants rubbing down, and print a little too patchy in the foreground. (9) Flat and poor. (10) Very much under-printed. (11) Wants clouds, and your sky line runs up. (12) We cannot make anything of this at all; too flat. (13) Too flat, otherwise a nice little bit. The position of the prints in our competition would depend a good deal on the other work sent in, but with a little more care in printing, etc., one or two should be in class 1.

T. HEADWORTH.—Obtain a piece of brass tubing, and mount the lenses with their concave surfaces facing one another, 1 in. apart, place the stop midway. It is really a job for an optician, and at best the lens will be only a makeshift.

BLANCHE.—If you are satisfied with the tone obtained from the combined bath, and do not use the same too long, you need not use the supplementary fixing bath, but your fault lies in not washing thoroughly after the combined bath.

H. I. C.—(1) The only thing to try is a very weak and acid solution of chloride of lime, but first try letting the cambric soak in a weak solution of alum and hydrochloric acid. (2) Transparency frames may be obtained from almost any dealere. Fallowfield, Adams, Pigott, Houghton, etc. (3) Use the largest stop which will give satiefactory sharpness of definition of detail on the screen. In developing, reduce the hydroquinone and increase the quantity of water.

G. H. SAICH.—We know of no apparatus which answers your requirements, but write more fully and let us know what size you want to enlarge from and to.

QUEEN HOTEL, CHESTER.—The formal lines of the masts are not very artistic, but with suitable clouds printed in this could be improved. We certainly do not like the tone of your print, and you would get a softer and more pleasing result by printing on a slightly rough surface.

LEXINGTON.—Is the paper new or old? See article by Mr. Howson in this issue.

R. E. S. L.—Statues would not be admissible as figure study. Competitors are only allowed to enter one class.

PHOTO.—The prints would be criticised this year.

J. G. ROBINSON.—The lens would probably enlarge up to 8½ by 6½ well.

W. E. ISON.—Send two unmounted prints, and 1s. 6d. to Stationers' Hall, Ludgate Hill, E.C., and they will copyright it for you.

RUSHALLITE.—We will consider your proposal, though we do not think it feasible, nor is founded on a fair basis. Size has nothing whatever to do with the awarding of medals.

NEMO.—(1) The salt does not decompose by keeping, only becomes deliquescent. (2) When the salt is bought, it should be immediately made into a solution of known strength. (3) No, we cannot recommend the borax bath. See the note on this paper in this issue, and try the bicarbonate bath there suggested.

W. P. T.—You have touched the paper with fingers contaminated with pyro or iron, thus causing the stains.

A. G. JEWITT.—Depth of focus is dependent on the aperture of diaphragm and focal length, and practically all lenses working at same aperture and focal length have same depth of focus. The new Concentric lens is rapid enough for shutter work in a bright light, but we should prefer one of the Universal symmetricals for this purpose. The statement that the U. S. works at twice the rapidity of the R. S. means that at full aperture the U. S. works at *f*/5·6, and the R. S. at *f*/8, and the exposures would therefore be as 31·3 : 64, or as 1 : 2. If you want great depth of focus you must have a lens of short focus. Write again if necessary.

TONING.—You will find on page 22 of our issue of July 8th, a very good formula for a combined bath.

Sale and Exchange

RULES.

CHARGE.—Twelve *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

ADVERTISEMENTS *can be inserted under a number the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, I, *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.**, *or a commission of* **2½ per cent.**, *upon the sale price of the apparatus.*

Bargains in Cameras and Sets.—Giving up photography. I want to dispose of my complete outfit, consisting of Hinton's Practical camera, half-plate size, one of the best and strongest I ever saw, and three double slides, a Ross whole-plate portable symmetrical lens, a Swift's whole-plate rapid Paragon lens a really splendid lens, a London Stereoscopic rapid landscape lens, whole-plate, Black Band series, a Thornton-Pickard time and instantaneous shutter, 3½ in. hood,

a Dscoudun's photometer, an Ashford's patent folding stand to take whole-plats, the whole contained in a eather case and warranted as good as new ; will sell separately if wanted ; approval willingly on deposit at offics of this paper. The real value of the whole is £25; I will, howsver, sacrifice for £20, or offers within reason; quite sufficient to start a man in business.—Apply, B., c/o Rev. J. Beck, Liberal Club, Saffron Walden.

S. Dalby Smith, St. Thomas Street, Weymouth, offers the whole of his kit at rare bargain to clear. Almost new whole-plats camera, every possible movement, best maks, with one doubls dark slide, 65s. ; finest quality whols-plate rapid rectilinear lens, fitted with L'Automatique shutter, 60s. ; half-plats camera, svery movement, with six double dark slides (mahogany), 70s. ; half plats rapid rectilinsar lens, finest quality, 25s. ; first-class three-fold tripod, cost 21s., as new, 15s. ; also dozens of quarter, half, and whole plats negatives of Weymouth and Dorset ; also very fine 10 by 8 negatives of exterior, interior, and reredos of Truro Cathedral ; all cheap.

Half-plate long-extension camera, as new, swing-back, rising front, reversing frame, rack and pinion, double elide, instantaneous lens, revolving stops, instantaneous revolving shutter, cost 173s., price 87s. 6d ; photo lens by Chadburn Bros., cost 126s , price 48s. 6d. ; half-plate French combination lens, cost 45s., price 30s. ; cabinet burnisher without lamp, 9s. ; pair 8 in. condensers, not been used, cost 110s., price 70s. ; background (snow scene), cost 48s., price 10s. ; studio stand, 7s. ; tripod legs, 5s. ; changing bag, 5s. ; approval.—P. Linley, 322, Albert Road, Hesley, Sheffield.

Cameras, etc.—Middlemiss' Criterion 10 by 8; camera, three slides, in perfect condition, price £5 approval ; deposit. — Norrington, Abbotsfield, Plymouth.

Half-plate camera and tripod, very cheap.—T. W. Birdsall, Victoria Street, Barnsley.

Lancaster's International camera, dark slide, three metal slides, adapter, tripod, velvet-lined box, 35s.—E. H , 44, Wandle Road, Wandsworth Common.

Cameras, Lenses, etc.—London-made high-class half-plate double extension camera, best leather bellows, reversing back, every necessary movement, one double slide, 47s. 6d. ; very finest half-plate extra-rapid rectilinear lens, exquisite definition, Waterhouse diaphragms, 22s. 6d. ; great bargains ; approval.—Cyclist, 8, Kenilworth Road, Willesden Lane, London, N.W.

A bargain. Lancaster's half-plate latest pattern Instantograph, complete, fitted with Optimus R R. lens, splendid condition, cash 60s.—Harding, 59, Margate Road, Southsea.

Modern half-plate camera, all improvements, double slide, and rectilinear lens, only used few times, 42s. 6d. —M. Newbouse, 20, Victoria Terrace, Lancaster.

Enlarging Apparatus.—Daylight enlarging apparatus, 12 by 10, price £2.—H., 36, Spencer Square, Ramsgate.

Exposure Meter.—Watkins' exposure meter, good as new, 9s —St. Lucy's Cottage, Kingsholm, Glouceeter.

Ferrotype Materials.—Six dozen 3¼ by 3¾ ferrotype frames, brasses, and glasses, 19 3¾ by 4¾ frames only, 86 cut out envelopes, 50 4½ by 3¼ brasses, 58 flat oval brasses, 4¼ by 3¼, 12 odd brasses, 28 ferrotype plates, 2¾ by 3½, and 46 ferrotype plates, 4¼ by 3¼, all new. What offers? Cash or exchange. — Saindon, 134, Queen's Road, Watford.

Hand-Cameras, etc. — Hand-camera, Samuel's small size, 30s. when new, in good condition ; stand for same ; also over 150 copies AMATEUR PHOTOGRAPHER. What offers?—Richardson, North Elphinstone, Tranent, N.B.

5 by 4 hand-camera with R.R. lene, finders, dark elide, rollholder, and spool for 48 exposures, price £3 ; deposit.—E. B., 82, Umfreville Road, Harringay Park, N.

Lancaster's Omnigraph hand-camera, in good condition, cost 25s , 12s. 6d. complete with changing box. —Reingpach, Langham Hotel, London, W.

Underwood's hand-camera, holds 12 quarter plates, quite new, cost 28s., will take 25s.—Lloyd, 2, Rupert Street, Leman Street, Whitechapel.

Hand-camera (Houghton's Automatic), carries 12 quartsr-plates, Thornton-Pickard shutter, automatic changer, rapid rectilinear lens, compact instrument, 9½ by 5½ by 4¾, has done good work, price £4 10s.—J. B. Hartness, Laurieton House, Ceylon Place, Eastbourne.

Lenses, etc.—Pair of Grubb's stereo lenses, in excellent condition, sell for £2, original price £4.—Evers, Faversham, Kent.

Portrait lens, half-plate, by Watson and Son, £2, cost £5, equal to new ; also several tripods, equal to n.w, at half-price. — Sprague, 35, Darnley Road, Hackney.

Wray's 5 by 4 R.R. lens, iris, and Caldwell shutter, specially built for instantaneous work, tested, highest speed 1-150th second, also time, cost 105s., take 68s., or take in part exchange Wray's 5 by 4 R R. handcamera, iris lens.—Richardson, architect, Wakefield.

For sale half-plate R.R. lens, by Robinson, Oxford Street, 25s., cost 37s. 6d ; Furnell's time and instantaneous shutter, fit 2½ in. hood, 20s., cost 30s., new this year ; six half-plate film carriers, 6d. each ; four quarter-plate ditto, 4d. each, as new ; Tylar's plate washer (tank with half and quarter-plate folding racks), 3s. 6d. ; and Tylar's Aquapoise washer, print tray only, 3s. ; half-plate single landscape lens, 5s.—31, St. Maur Road, Fulham.

Grubb's C2 portrait lens, 10 by 8, cost £16, sell £5 ; Burr's 12 by 10 W.A., cost £5, sell £3, as new ; Optimus rapid euryscops, 7 by 5, cost 94s. 6d., sell 60s., perfect ; Lancaster's Instanto, three metal slides, R.R. lens and stand, cost £5 10s., sell 70s.—Parlby, Cradock Street, Swansea.

Ross' 10 by 8 portrait lens, with Watsrhouse diaphragms, perfect condition.—Robinson, 7, Northgats, Darlington.

Half R.R. lens by Sands and Hunter, perfect, £1, cost double ; quarter camera, lens, slide, stand, 9s. ; four trays, two baths, roller, lamp, books, etc., 5s.—H. Locks, 7, Sedgwick Road, Leyton, Essex.

Negstives. — Fifty quarter-plats instantaneous negatives (views of London), suitable for making lantern slides, 1s. each ; specimen and list, 1s. 3d.—John Stabb, 154, Queen's Road, Bayswater.

Rollholder.—For sals, Eastman rollholder, whole-plats, good order, 45s.—G. E. Galbraith, Gladstone Place, Stirling.

Sets.—Underwood's 1892 half-plate Instanto set, good as new, only 63s.—Ricketts, Cheltenham House, Stroud.

Half Instantograph camera, lens, shutter, three metal slides, and stand, 67s. 6d. ; approval.—Thomas, 1, Grugos Terrace, Port Talbot.

Lancaster's quarter-plate Instantograph, fitted with Optimus rapid rectilinear lene, three double dark slides, and three-fold tripod, quite new, leather case, stops, cost over £5 5s , will take £2 10s.—Miss Forrest, 34, Sandgate Road, Folkestone.

Half-plate camera, double extension, reversing back. all movements, tripod, R.R. lenses, instantaneous shutter, view finder, etc., £6.—H. Wells, Bookseller, Norwich.

Lancaster's brass-bouud 1891 half-plate Instantograph, double slide, lens, changing box, Thornton-Pickard time and instantaneous shutter, leather case, lock and strap, Tylar's exposure meter, price £4.—H., 36, Spencer Square, Ramsgate.

Rouch 5 by 4 camera, changing back for 12 plates, three double slides, leather case. £4 ; Ross' whole-plate rapid symmetrical, £4 10s. ; Dallmeyer W. A. landscape, whole-plate, £3 ; Meagher whole-plate camera, three slides and stand, £4 10s. ; two Wray's 5 by 4 R.R., paired by maker, £4 ; all as new ; £18 the lot.—Rev. J. A. Lloyd, Mere Vicarage, Wilts.

Underwood's half-plate Inetanto set, complete. cost £4 4s. a month ago, will sacrifice for £2 17e. 6d.—Photo, 83, Crosby Street, Maryport.

To be sold, a 12 by 10 photographic camera by the Stereoscopic Company, with three lenses, three dark slides, and instantaneous shutter, in leather case, complete, only used a few times, with stand ; also complete set of developing necessaries in leather case.—Apply to W. F.,; Hill House, Crowhurst, Battle, Sussex.

Sundries.—AMATEUR PHOTOGRAPHER, 9 volumes, vols. 6 to 14, unbound, clean, and complete, any reasonable offer, cash.—Sorensen, 20, Porteue Road, Harrow Road, W.

Model marine copper tnbular boiler, high class, £6 10s.—Burt, 67, Forest Road, Dalston.

Lathe, 2¾ centers, 3ft. bed, £2 10s.—Burt, 67, Forest Road, Dalston

Ancient model gun frigate, suit captain, £10.—Burt, 67, Forest Road, Dalston.

Tripod.—Whole-plate two-fold tripod, new, perfectly rigid, 8s. 6d.—309, Liverpool Road.

WANTED.

Cameras, etc.—Anyone having any quarter Lancaster's camera (Instantograph preferred) for sale or exchange, send their address with particulars to O. H. Medley, Heaton Chapel.

Wanted, quarter-plate double extension Kinnear-shape bellows camera, with turntable and legs, two or more double slides, good maker, cheap for cash ; approval ; deposit.—W. Clare, Malvern Wells.

Hand-camera, etc.— Wanted, high-class hand-camera for cash.—c/o 23, Adelaide Street, Blackpool.

Lenses, etc.—Wanted, cheap for cash, good 5 by 4 wide-angle rectilinear lens; approval ; deposit.—Wiseman, Painswick, Glos.

Sundries.—Will the gentleman who took photo of a white yacht off Gorleston Pier on 12th inst. kindly send copy to J. F. Palmer, Ewell Road, Surbiton ?

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

Bargains in Hand Cameras.—Optimus magazine hand-camera, covered leather, carries 12 quarter-plates, finest Optimus rapid rectilinear lens, two finders, shutter, etc., as new, take £5 5s. ; Talmer hand-camera, carries 12 plates, fine lens, two large finders, time and instantaneous shutters, as new, take 65s. ; Swinden and Earp hand-cameras, carries 20 quarter-plates, fitted Taylor and Hobson's best rapid rectilinear lens, roller-blind shutters and case, as new, £6 15s. ; Steinheil hand-camera, 9 by 12 centimetres, rapid rectilinear lene, two finders, shutters, carries twelve plates, bag changing, as new, take £4 10s., cost £10 10s. ; Optimus detective camera, by Perken, Son, and Rayment, Optimus rapid rectilinear lens, carries six ¼-platss, covers black leather, take £4 4s. ; Lancaster's Omnigraph, covered leather, good lens and shutter, take 15s. ; Samuel's quarter-plate hand-camera for twelve plates, quite new, rapid rectilinsar lens, two finders, take 27s. 6d . Griffiths' best quality hand-camera, carries six ¼-plates, two sunk finders, good lens, pneumatic shutter, take 30s., cost 42s. ; quite new, all above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Cameras! Cameras! Cameras! Lenses ! Lenses ! Lenses ! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every deecription of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Liets free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus of every description bought, sold, or taken in exchange. Inspection invited.

Bargains in Cameras and Sets. — 15 by 12 double extension camera, leather bellows, rising and falling front, wide angle movement, fitted three double slides, as new, take £8 8s. ; 12 by 10 camera, double extension leather bellows, wide-angle movement, double dark slide, fitted fine rapid rectilinear lens and sliding stand, a grand lot, £9 17s. 6d. ; Optimue whole-plate camera, leather bellows, revereing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterhouse stops, Thornton-Pickard shutter, three double dark slides, three-fold stand and case, £11 5s.; whole plate Underwood instanto, wide-angle movement, leather bellows, double extension, rapid rectilinear lens, iris stops, fine definition, double slide, half-plate carrier and folding stand, as new, take £5 15s. ; whole-plate camera by Hare, grand article, leather bellows, double extension, wide-angle movement, double slide, changing box, for 24 plates, also changing slide, Optimus rapid rectilinear lens, Waterhouse stops, brand new three-fold etand and case, take £10 17s. 6d. ; half-plate 1892 Instantograph camera, all latest improvements, Instantograph lens, iris stops, shutter, double slide, folding etand and case, take 72s. 6d., as new ; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding etand, £5 17s. 6d. ; 1891 Instantograph camera, lens, shutter, slides, and folding etand, 32s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Lenses.—15 by 12 Lancaster's rapid rectigraph lens, Silver Ring, iris stops, grand definition, take £5 17s. 6d., quite new ; 10 by 8 Lancaster'e rectigraph lens, Silver Ring, iris stops, as new, £3 7e. 6d. ; whole-plate portrait lens, rack focussing, Waterhouse stops, works *f*/6, take 63s. ; whole-plate True-view lens by Charterhouse Stores, iris etope, movable hood, quite new, take 65s. ; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60e. ; 8½ by 6½ Ross' rapid symmetrical, Waterhouse stops, grand definition, as new, £4 12s. 6d. ; half-plate Ross' portable symmetrical, rotating stops, 4 in. focus, finest order, 45s. ; quarter-plate Continental wide angle rapid rectilinear, rotating stops, as new, 25s. ; half-plate wide angle, by Morley and Cooper, rotating stops, as new, 27s. 6d. ; half-plate wide angle, by Lancaster, 10s. 6d. ; half-plate Ross' rapid symmetrical lens, as new, moveable hood, Waterhouse stops, take £3 17s. 6d. ; Mayfield'e 7 by 5 rapid rectilinear, Waterhouee stops, covers well, 32s. 6d. ; Wray's landscape, casket lenses, 5 in., 7⅛ in., and 10 in. focus, iris stops, quite new, £3 17e. 6d. ; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d. ; quarter-plate Optimus rapid rectilinear by Perken, Son, and Rayment, Waterhouse etops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.— On view, City Sale and Exchange Roome, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

RICHARDS' Patent Cornere, for mounting photos, prints, scraps, etc., in albums, scrap books, and mounts ; clean, convenient, ornamental, self-contained and always handy. Ready gummed, price 1s. the box or by post 1s. 1½d —F. Watson, 17, Dartmouth Street, Westminster, S.W.

IMPORTANT TO AMATEURS.—Negatives skilfully Retouched, Printed in silver, gelatino-chloride, etc., and Enlarged. Also Developing, Copying, etc.—Terms strictly moderate.—Address, Wilfred Emery, 24, South Street, Baker Street, W.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 414. Vol. XVI.] FRIDAY, SEPTEMBER 9, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc, from 10 till 1 o'clock.

Our Views.—A New Chemical Name—Photography and Royalty—A Photographic Joke—A New Use for Photography—A Thief Detector—An Early Lens—The Queen's Dolls—The P.S.G.B. Exhibition—Photographs of the Year—The Camera Club Winter Session—A New Exhibition—Decease of the East Southsea Society—East London Society's Exhibition—A New Field for Photographers—The Discovery of the Ark—Photographic Spies—Notice—Mr. S. W. Burnham.

Letters.—Exposure for Interiors (W. H. H.)—Gloucester (Wilkinson)—New Tones on Chloride Paper (Heath)—Waste Material (Howes)—A Question (E. C.)—Society for Forest Gate (Wilton).

Articles.—Photographic Procedure (Wall)—General and Photographic Chemistry (Conrad)—How to Make a Set of Photographic Apparatus (H. J.)—Harmonising Harsh Negatives (McIntosh)—Toning of Chloride Prints—Photography in Geology.

Holiday Resorts.—County Antrim.

Society Meetings.—Aberdeen—Great Yarmouth—Hackney—Putney—S. Manchester—Warrington.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months,	5s. 6d.....	Twelve Months,	10s. 10d.	
Postal Union	,, ,,	6s. 6d	,, ,,	13s. 0d.	
Out of Postal Union ..	,, ,,	7s. 9d.....	,, ,,	15s. 3d.	

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addreased to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 40.—"Portraiture and Figure Study." Latest day, Sept. 19th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, October 14th.)

The tendency of the present age is to hurry and scurry as much as possible, and even photographers seem to think that life is too short to pronounce certain words in full, and "pyro" and "hypo" are far more often used than the full names. To many, too, chemical and even some photographic terms are a stumbling-block. The word denoting the latest colouring matter however, is even worse than anything photography can show, and few could, we think, pronounce it the first time of reading. The word is tetramethyltriamidodiphenyl-methyl-oxytolylmethane, by no means a bad little mouthful. Certainly photographers have much to be thankful for.

Photography is now stated to be the craze of Royalty and the upper circles. Our own Princess of Wales has long been a devotee, and there has lately been on show in Stockholm an exhibition of Egyptian photographs taken by the Crown Princess of Sweden and Norway. The Queen of the Belgians has also been inoculated with the mania, and is taking lessons from the best men of Brussels.

Certainly a great deal of the popularity of photography is due to the introduction of hand-cameras, and so universal have they become, that one meets them everywhere and in all hands. So generally has this become recognised that even the professional jokist takes the hand-camera as a promising subject, and the latest on this point is the following:—

Brown: And so that young woman is going to bring a suit of breach of promise against you? Did you ever write any compromising letters to her?

Green: Never wrote a letter of any kind.

Brown: Then you're all right. She can't prove anything.

Green: Can't she? Whenever I called she had her brother take snap shots of us with his Kodak."

Another side is the use made of photography for different purposes, but the following clipping from *Truth* certainly has its comic side:—

"The Rev. A. E. Johnson, minister of the Baptist Providence Chapel at Penknap, near Westbury, advertised in the local papers that there would be baptising by him last Sunday morning in Stormore Water, a neighbouring lake, and he invited the attendance of photographers."

Turning from the comic to the more serious side, photography has been of considerable assistance to justice. Defaulters and criminals in many cases owe their arrest to

having at some unfortunate moment had their photograph taken, which, although in the first instance merely a love token, has later become the instrument of their arrest. The following thief detector, which appears in an American paper, is certainly a novel application. A cigar merchant had for some time missed cigars from his glass show-case, and, unable to detect the thieves, he fixed up a flash-light apparatus which was connected with the show-case by the wires of a battery, so that on opening the show-case the circuit was closed, the camera shutter opened, a flash-light ignited, and the plate exposed, catching two boys in the act of opening the case. Obviously the applications of this plan are very numerous, and it adds yet another terror to the life of the honest burglar.

IT has always been an undecided question as to when lenses were first made. Although Sir David Brewster states that a piece of rock crystal of plano-convex form now in the British Museum in the Assyrian section, and the date of which is about 720 B.C., was designed for magnifying, we have no satisfactory proof of it. Mr. H. G. Hanks, in a paper before the Astronomical Society of the Pacific, quoted the following extract from the works of Henry Cornelius Agrippa, who lived in the early part of the sixteenth century:—"So we read, as Coelius in his ancient writings relates, that one Hostius, a person of an obscure life, made a sort of glass that made the object seem far greater than it was; so that one finger should seem to exceed the whole arm both in bigness and thickness." The exact date of Coelius is uncertain, but there is evidence that he lived prior to Livy, B.C. 59, and therefore Hostius was still earlier.

THE September number of the *Strand Magazine* will contain reproductions from photographs of a large number of dolls which were dressed by the Queen when she was a girl. These little beings have been stowed away in Buckingham Palace, whence they were unearthed by Sir Henry Ponsonby. They have been photographed by Messrs. Elliott and Fry, and Her Majesty has herself corrected and revised the manuscript referring to them.

WE are requested by the Secretary of the Photographic Society of Great Britain to remind our readers that the Exhibition will open on Monday, 26th inst., and remain open until November 10th. The usual conversazione will be held on Saturday, September 24th. As heretofore, medals will be awarded for artistic, technical, and scientific excellence of prints and apparatus, the judges being Messrs. Debenham, W. England, F. P. Cembrano, jun., F. Hollyer, and J. Traill Taylor, with Captain Abney and Andrew Pringle as scientific experts. The Assistant Secretary of the Society will forward entry forms, and the latest date for sending in exhibits is the 14th inst., at 5A, Pall Mall East.

IT is well known that there will be some notable abstentions this year; many of our best workers will not be represented. But, as suggested the other day to us, this will give some of the younger workers a chance to show us that they can and will do equally as good work as the older hands. Be that as it may, the Pall Mall Exhibition is looked forward to with great interest and curiosity.

THE well-deserved success of the 1891 "Photographs of the Year" encourages our publishers to issue another portfolio containing the pictures of 1892. We cannot, of course, make any announcement as to the particular pictures which will be reproduced, nor the date of publication, but the selection has been placed in the hands of a very artistic worker in photography, and we are sure that this year's issue will not be inferior to last. It will contain twelve reproductions in Woodbury gravure or other permanent process, mounted on india-tint plate-sunk mounts. The pictures as last year will be accompanied by letterpress, which will form a valuable critique upon the Exhibition pictures other than those reproduced. The book will be published at half a guinea, but a limited number will be sold *to subscribers* at 7s. 6d.

THE winter session of the Camera Club will be opened as usual by a smoking concert and soirée on Monday, October 10th. Members of the club will find the rooms at their soirée very artistically decorated, this work not having been done before, as the walls were not considered dry enough.

IT has been usual to inaugurate the winter session of the Camera Club by a "one man" exhibition, and although this series has been exceedingly popular, the powers that be have made an innovation which we unhesitatingly say will be very popular; they intend to hold a special invitation exhibition, which will include specimens of the recent work of every leading worker in photography.

WE regret to note that the East Southsea Photographic Society has died a lingering death from inanition.

THE East London Photographic Society will hold an open class competition, at their head-quarters, Shoreditch Town Hall, of which the following are the main conditions, the subject being "General Photography:"—

(1) Open to ladies and gentlemen. One print only to be sent in this competition. Entrance fee, 1s. Prize pictures shall become the property of the East London Photographic Society. (2) The work must be entirely that of an amateur photographer—exposure, development, retouching, printing, toning, and mounting. (3) Photographs may be printed by any process, or on any paper, but must not be printed on opal or mounted in optical contact on glass, or from an enlarged negative. (4) Prints must be sent in not later than October 18th, 1892. (5) No name must appear on the print, but the title must be legibly written on the front of the mount, and the entry-form duly filled up and enclosed. (6) Prints having been awarded a prize in any previous competition, will not be eligible for competition. (7) Prizes: 1st, silver medal; 2nd, bronze medal; 3rd, certificate. (8) Unsuccessful prints will be returned if accompanied with stamps.

All photographs to be endorsed E. L. P. S., "Open Class Competition," and addressed to Mr. M. A. Wilkinson, 28, Shacklewell Lane, Kingsland, London, N.E., from whom entry forms, etc., may be obtained.

THE extension of the Metropolitan Railway to Aylesbury has opened up a new and easily accessible field to amateurs. Wendover, Aston Clinton, Princes Risborough, Waddesdon and the Vale of Aylesbury will now be the happy rambling ground for photographic societies, on their excursions. Aylesbury is in parts a curious, sleepy old place, though there is plenty of life too here and there, and our publishers' printing works at one end of the town give bustle and life to leafy roads and country lanes.

According to our contemporary *Science Siftings*, the Rev. J. T. Nouri, the Chaldean Archdeacon of Babylon and Jerusalem, has informed the representative of a San Francisco paper that he has actually discovered the remains of Noah's Ark on the top of Mount Ararat. The following is his description:—

"It was in the month of March that we made up our minds that it would be impossible to reach the top in such weather. We must

wait till the snow, or a great deal of it at least, melted. We accordingly went still further below, and remained till April. Then we were abundantly paid for all our labour, for we discovered what I feel sure was the ark, the actual work of Noah. I discovered it myself, being the first to see it. I saw it through a field glass at first, though we got so close to it that it was visible to the eye alone. We had reached a bight over the green grass, and at length in deep snow and over glaciers of probably 16,000 or 16,500 feet and within 1,500 or 2,000 feet of the top. Presently a great object came into view through the glass. The bow and stern were clearly in view, but the centre of it was buried in snow and one side of it had fallen down and was decayed. It stood more than 100 feet high, and was more than 300 yards long. The wood seemed very peculiar. It was dark reddish, almost iron-coloured, and seemed very thick. I saw it perfectly, especially the rear part. It is between 5,000 and 6,000 years old. Would the wood last for that time? Oh, yes. It would not were it not for the snow, but that has preserved it. Were it not for that, constructed even of hard wood as it is, it would have been impossible to last over 2,000 or 3,000 years. As it is, it will be preserved for ages and ages, perhaps 20,000 or 30,000 years."

We have often heard before of the discovery of the ark, the last explorer advancing as a proof the fact that he saw a grease spot where Ham sat down.

But our object in calling attention to this report is to point out how incontestable the statement would be had the venerable archdeacon or one of his party photographed it. One of our readers wishes to know which would be the best plate and light to photograph it in? Unfortunately, we have had no personal experience in this particular line. Can any of our readers oblige with the information?

—•:⌘:•—

It is no uncommon thing to find some unfortunate English traveller getting into trouble over photographing in or near fortifications, but at last we are even with the foreigner, for one has been arrested in Brisbane for photographing the forts there.

We should like to know what would prevent anybody from using one of Dallmeyer's telephotographic lenses for this illegal practice? It would be no easy matter to detect and catch a photographic spy who worked a mile or two off.

—•:⌘:•—

We wish to draw the attention of our readers to the following announcement:—

In no case will the Proprietors of the Amateur Photographer undertake to buy or sell any goods on commission, nor will they be responsible for the safety of any negatives or prints sent to the Editor of the Amateur Photographer for any purpose whatever, although all reasonable care will be taken of the same.

The Editor claims the right of refusing any print, lantern slide, etc., sent in for competition, without assigning any reason for such refusal.

—•:⌘:•—

Mr. S. W. Burnham who has probably the highest repute of any astronomer as a discoverer of double stars, and who has made of course the application of photography to astronomy his particular study, and has, in his official capacity, as chief assistant to Professor Holden, at the famous Lick University, probably accomplished more in this direction than any one else—is retiring from his post to one more lucrative, if less scientific. We need hardly fear, however, that his invaluable services will be lost to astrophotography, as in his early days Mr. Burnham was a stenographer by day and an astronomer by night. He even once competed in one of our competitions and took a medal. Outside astronomical photography, he is well known in America for his successful instantaneous work.

—•:⌘:•—

The Pendleton Lads' Club will open their Winter Session on or about the 28th inst., with an Arts and Crafts Exhibition, photography being included in one section.

Letters to the Editor.

EXPOSURE FOR INTERIORS.

Sir,—Perhaps you can find space for a reply, in a perfectly friendly spirit, to "J. G. P.'s" remarks on my times of exposure. I confess I have often been fairly astonished myself with the good results obtained from very short exposures, which led me to conclude that the tremendously prolonged exposures usually recommended were a survival of the old wet plates, and quite unnecessary now. Here is a somewhat extreme case. On a dull day in March I was photographing in Worcester Cathedral, and taking a view of the choir and King John's tomb. It was so dark that I could scarcely see to focus. I was using isochromatic instantaneous plates, and intended to give it half an hour, but the inexorable necessities of railway travelling compelled me to be content with fifteen minutes. As it was such a dark day, I, of course, expected it to be hopelessly underexposed, but to my surprise it came out very well with full detail. The fact seems to be that there is considerable latitude of exposure in interior work, and the results of over-exposure are not so apparent as in outdoor photography. The longer the exposure the greater the risk of halation, and if ten minutes is sufficient, what need to expose for an hour? I have not seen any nave or choir yet which required so long, except in very dull weather indeed. Winchester and Salisbury are nearly as light as out of doors, and five minutes was quite enough. Ten sufficed at Peterborough, fifteen to twenty at Exeter; and Gloucester, Durham, and Worcester, which I visited on very dull days in March alone, required exposures of forty minutes. Then as to developer: I entirely disagree with the notion that hydroquinone, *of necessity*, produces either hardness or lack of detail. Some years ago, before this developer was well known, Mr. W. S. Ingall used to write articles in the "Year Book," extolling it for possessing those very qualities of softness and detail for the lack of which it is now condemned. I hold that the fault is with the user. Most of the ready-made developers now sold are much too strong; but the chief fault is with that highly objectionable hydrate of soda now so generally used, because it is quicker in action than the mild carbonates. It is violent and uncertain in action, often fogging the plate and blocking the lights before the shadows are out, besides producing frills and blisters from its highly caustic nature. Discard it, and substitute carbonates of potash and soda; avoid the use of bromides; make up your developer weak in hydro (just as you would with pyro for the same work), and the result should be quite equal to those of our old but very dirty friend, pyro. Good results depend greatly on the way a developer is used. Pyro will be quite as hard and unsatisfactory as hydro is supposed to be, if it is used as improperly as hydro very often is. I am very slow in taking up a new developer. I stuck to pyro, long after hydro had become a mania; but when I was at last persuaded to try it I was converted at once, and have never used any other, and still like it as well as ever, now that the mania seems to be over. I think glass plates are quite unsuitable for interior work. Backing is a "tedious and dirty business, involving infinite trouble" (*vide* Amateur Photographer of this week), and of very doubtful utility. Films show no halation under ordinary circumstances, but sometimes both films—and even Eastman negative paper—had this annoying defect nearly as badly as glass; so that it seems to be a real phenomenon; at least, in some cases, due, I believe, to aberration, and quite independent of the support used.

I enclose some prints from my negatives for your inspection, and leave it to your judgment whether they are either underexposed or deficient in detail. Of course, I do not mean that my times apply in all conditions of light, weather, or time of year. There is always room for discretion in these matters, but they are those which, under the circumstances, I found to be quite sufficient.—Yours, etc., W. H. H.

[Only two out of the dozen prints sent by our correspondent show undue hardness in certain portions, and in both these cases they are white pillars—we should say brilliantly illuminated.—Editor.

* * * *

GLOUCESTER.

Sir,—With reference to the account of a visit to this ancient city contained in last week's issue of the Amateur Photographer, I notice that your correspondent omitted to mention

the name of a photographic dealer where plates could be changed, etc. Kindly allow me now to supply this information, which may be useful to your readers.

I have pleasure in stating that Mr. Walwin, chemist and dealer in photographic apparatus, of Southgate-street, Gloucester, affords ready access to his dark-room for a trifling fee, or customers may have the use of same free. Mr. Walwin is also Secretary of the local society, and a most courteous gentleman.—Yours faithfully, E. R. WILKINSON.

* * * *

NEW TONES ON CHLORIDE PAPER.

SIR,—With reference to the now almost universal chloride printing-out papers, I am not aware if it is generally known that green and blue tones are producible upon them. A very pretty green suitable for landscapes pure and simple is easily obtained, and greeny-blue tones very effective for moonlight effects by same formula. It is obtainable by fixing prints direct from frame, and toning with uranium and ferricyanide of potash, a good washing, and flooding with a weak solution of perchloride of iron. This treatment I have seen recommended for bromide, and tried it on chloride paper, upon which it has the same effect. It may be information to some that these papers can be toned *after fixing* with uranium.

FORMULA.

Uranium nitrate	4 gr.
Ferricyanide potash	4 „
Vinegar or acetic acid	A few drops.
Water	8 oz.

Dissolve ferricyanide in water, add half a drachm of acetic acid, then the uranium nitrate.

After washing, which should not be too vigorous, put three or four drops of perchloride of iron into 2 oz. water, and flood the print. This tones through a browny-green to green, and afterwards blue-green.—Yours, etc., CHAS. E. HEATH.

* * * *

WASTE MATERIAL.

SIR,—This is indeed a "large" order in connection with photography; and without doubt, great benefits would be derived from it. I myself have occasion at times to cut up a large number of sheets, which will forthwith go into the sack, but I shall take the precaution to have it weighed. Then again I have the toning, washing, and fixing baths; these I shall put in carboys. These also shall be weighed, and I think that if all amateurs and professionals will do likewise, and send them up to you—"they must be sent to you as per letter"—you might possibly find enough work to keep the unemployed in full swing. At anyrate, Pickford and Co. would be able to treble their staff, and you could call in the contractors to pitch up a block of houses. Of course, I shall expect my share of the profits. A first-class outfit will suit me at present (10 by 8), and I would only be too pleased to offer my services on salary and commission, but I would prefer a tram car, with rails around towns, country, and coast.

Mr. Editor, here is your chance of immortalising your name, the greatest benefactor of the universe. Here is the solving of the social question. Do, I beg of you, charter your dust carts, hasten your contractors, issue special orders for bonfires on Hampstead Heath. Cry aloud for more lifeboats, and your fame is assured but above all do not forget my outfit.—Yours, etc.,

H. HOWES.

* * * *

A QUESTION.

SIR,—Pardon your servant in this thing, but the desire has come upon me to write you a line, being an amateur of the amateurs, with a barrow load of used up plates to testify, to which I often look with a heavy heart, and sometimes wonder if the day will ever come when I shall realise any of those feelings which spring from conquest. Longfellow reminds us that—

We should act that each to-morrow
Finds us further than to-day.

This I want to do, but, for a working man, is the game worth the candle?—Yours, etc., R. C.

[Our pardon is readily granted, and if our correspondent will send up some prints with what they are intended to represent written on the back, so that we may not offend him by criticising the portrait of a long-eared quadruped as his, we or our readers may be able to help him.—EDITOR.]

SOCIETY FOR FOREST GATE.

SIR,—I know of no photographic club in the districts of Stratford and Forest Gate, and if any of your readers who reside near this way would like to have one, and join it, I should be glad if they will communicate with me on the subject.—Yours, etc., S. L. WILTON.

Longmoor Villa, Romford Road,
Stratford, E., Sept. 5th, 1892.

Photographic Procedure.

By E. J. WALL,

(*Author of the "Dictionary of Photography."*)

SECTION VI.

DEVELOPERS AND DEVELOPMENT.

(*Continued from page* 136.)

Pyro and Ammonia.—Probably this has been and is still the developer most used, especially by professional photographers, and therefore a somewhat full consideration of its use will not be amiss.

In the first place we may use our pyro dry, and measure or weigh out the quantity for each plate, but it is far preferable to keep the same in a stock solution of given strength, say, 10 per cent., by which means we may measure out the required quantity of solution at once, more conveniently than weighing or guessing. We have already spoken of the addition of certain substances to the pyro solution which may act as preservatives and prevent the rapid deterioration of the solution from absorption of atmospheric oxygen, and as pyro is more liable to oxidation when in alkaline solution, an acid is frequently used as a preservative. A stock solution compounded on these lines may be made as follows:—

Pyrogallol	1 oz.*
Nitric acid	30 drops.
Distilled water to	9 oz.

or

Pyrogallol	1 oz.
Citric acid	40 gr.
Distilled water, to	9 oz.

These solutions will not keep very long without some slight colouration ensuing, but this need not be taken much notice of. If kept in the dark and well stoppered, they may be constantly opened and yet keep good for about six months.

The Restrainer.—This, with every form of developer, is, as we have already stated, a soluble bromide, usually of potassium or ammonium, and although numerous questions and statements have been made upon the subject, there exists, so far as I know of, no authoritative statement as to the different powers of these two salts. If, as has been stated, their restraining power is dependent on the amount of bromide they contain, then the ammonium salt should be the stronger, but in practice they may be considered of equal strength, and a convenient stock solution may be made by dissolving

Ammonium or potassium bromide ..	1 oz.*
In distilled water up to	9 „

There is only one point in connection with the question of which to use, that is of any importance, and that is that when ammonium bromide is used with a sulphite or meta-bisulphite, the ammonia is set free, and may and does lead to some curious results sometimes.

The Accelerator.—This is also conveniently made in a 10 per cent. solution by adding—

Solution of ammonia (sp. gr. ·880) ..	1 oz.
Distilled water	9 „

* 437½ gr. 1 commercial ounce bottle.

Many advise the use of the strong liq. ammonia ·880, as it is called, itself, but this is not advisable, so difficult is this solution to keep of full strength that once opening of the bottle is enough to reduce the strength, and it is also much easier to use a weaker solution in developing, as slight errors in measuring are not of so much moment.

The Developer proper.—The quantities of the developer for each given sized plate varies not only with the size, but also with the worker's own ideas, and also with the kind of dish used, some dishes requiring more solution as the plate does not lie flat on the bottom in them.

We may consider, however, that a quarter-plate, $4\frac{1}{4}$ by $3\frac{1}{4}$ in., will require $1\frac{1}{2}$ oz.; a half-plate, $6\frac{1}{2}$ by $4\frac{3}{4}$ in., 2 oz.; a whole plate, $8\frac{1}{2}$ by $6\frac{1}{2}$ in., 3 oz. Many workers can use less, but it is just as well, especially for beginners, to use the quantities we have given above, as there is less chance of bubbles being formed.

As we shall have to consider the development of a plate, it will simplify matters considerably if we take one given sized plate, such as a half-plate, but as a guide to users of other sizes, we may as well state that a normal developer will contain 3 grains of pyro, 3 grains of bromide, and 3 to 4 drops of ammonia in every ounce. Mr. Bothamley, in a communication to the P.S.G.B., gives the following as a

STANDARD PYRO-AMMONIA.

A.

Real ammonia, NH_3	5 parts
Ammonium bromide	10 „
Water up to	1,000 „

B.

Pyro	10 parts
Water up to	1,000 „

Mix in equal volumes immediately before use, and develop for ten minutes in an open dish, with occasional rocking, at 15 deg. C (60 deg. F.).

Let us return, however, to our half-plate. Before taking the plate from the dark-slide, mix your developer, or at least measure out the quantities. We want 2 oz. of developer, and therefore measure out 60 minims of pyro solution, the same quantity of bromide solution, and make up to 2 oz. with water. Measure out 40 minims of ammonia in a separate measure, and for this purpose a graduated minim measure is preferable. Now remove the plate from the dark slide; dust the film well with a soft, flat camel's-hair brush or piece of soft wash leather. Care should be taken that the brush, or wash leather, is not roughly used, as we have seen curious scratches formed in this way, which have considerably puzzled the operator. Lay the plate in the dish, and add 10 minims of ammonia to the diluted pyro solution, and, taking the dish in the left hand, sloping it gently from you, pour the developer over the plate in an even wave, and rock the dish gently, and then examine for the air bubbles. These, as a rule, can be better seen by looking sideways at the dish, and if one is seen it should be immediately broken with the tip of the finger. Many recommend the use of a brush in the developer for the same purpose, but, personally, I do not like the brush, because it is very liable to introduce dust or traces of old oxidised developer. Others again, and I am sorry to say that I am rather fond of this trick, pass the tips of the fingers rapidly over the surface of the plate when wetted by the developer, and, provided the fingers are clean—and they should be—I have never found the slightest harm accrue to anything but the fingers, which sometimes get a little stained by this method.

After gently rocking the plate for about a minute it should be examined to see if there is any sign of an image. For this purpose it is not necessary to lift the plate from the dish and hold it up to the light. Faint traces of the image can be seen far better by looking down on it. Usually some portion of the high lights will appear first—in a portrait, the cuffs and collars; in a landscape, the sky. As a rule, however, unless the plate has been much over-exposed no sign of the image can be discerned, so pouring another 10 minims of ammonia solution into the measure we pour the developer from the dish back on to the same, and then flood the plate again with the developer. It will be noted that we have suggested adding the developer to the ammonia in the measure—not the ammonia to the developer in the dish. If the latter plan be adopted it might happen that the full strength of the ammonia was exerted in one spot, and a black patch be caused there. Gently rocking the dish, we now watch it for another minute, and probably we shall see faint indications of some portions of the image, then we add another 10 minims of ammonia in the same way as before, and again watch the image, which should now be plainly visible, all—but in some small portions—gaining strength or density, as it is called. If, after allowing development to proceed for another minute or so, there are still some parts of the plate absolutely white, or the image is not dense enough—and this is a point, unfortunately, which experience alone can teach—we then add the remaining quantum of ammonia, and continue as before, till development is finished, when the plate may be well rinsed and fixed.

(To be continued.)

General and Photographic Chemistry.—VI.

By E. C. CONRAD, F.C.S.

THE NON-METALLIC ELEMENTS AND THEIR COMPOUNDS.—(*Continued*).

COMPOUNDS OF NITROGEN WITH HYDROGEN AND OXYGEN.

Ammonia, $NH_3=17$.—Weight of a litre at Stp., 0·762 gram. Oc.: In the air and rain water. M.: Largely obtained by the destructive distillation of coal, as in the manufacture of gas; by blowing steam through the ammoniacal liquor produced, ammonia is given off and condensed in dilute vitriol forming ammonium sulphate. It can also be obtained by the direct union of its elements. When any of the compounds of ammonia are heated with the alkaline earths or caustic soda, they are decomposed and their ammonia is given off. Thus ammonium chloride, or sal-ammoniac, gives with lime water, calcium chloride, and ammonia. Eq.: $2NH_4Cl+CaO = 2H_2O+CaCl_2+2NH_3$. This reaction takes place slowly at the ordinary temperatures, and rapidly on gently heating. Ammonia being 0·58 times lighter than air, can be collected by upward displacement. P.: Ammonia is a gas at the ordinary temperatures and has a pungent odour, and if inhaled in quantities it has an injurious action on the membranes of the throat. Ammonia gas can be condensed to a liquid by cooling it to $-40°$ or by a pressure of six atmospheres at 10° C., and it freezes to a transparent ice-like mass at $-75°$. The gas is feebly combustible, burning with a greenish-yellow flame. By passing the gas through a red-hot tube it is decomposed into its elements. It is extremely soluble in water; at 20° C. 68 volumes of the gas are absorbed by one volume of water, and at 0° C. 1,149 volumes. The solutions increase very much in bulk, and the strongest obtainable has a S.G. of 0·88, and freezes at $-38°$. The whole of the gas is expelled on boiling. The gas and its solution has a strong alkaline reaction, turning reddened litmus blue, and

neutralizes all acids. Ammonia acts as a metal, forming a series of salts similar to those of potassium and sodium. *Tests.*—Ammonia gas and its solution can be recognised by (1) their characteristic smell, (2) action on litmus paper; (3) giving a white precipitate with solutions of mercuric chloride. Very dilute solution gives a brown colouration with Nessler's solution (a mixture of potassium iodide, mercuric chloride, and caustic potash dissolved in water). *Uses.*—The condensed gas is employed for refrigerating purposes. The solution is used as a reagent, precipitating most metals from their salts as hydrates. With solutions of copper salts it gives a characteristic blue colouration. Ammonia solution readily dissolves silver chloride, silver bromide with difficulty, and silver iodide is insoluble. U. P.: The gas is used to some extent in the manufacture of dry plates and sensitive papers. The solution is used in gelatine bromide emulsion making, in which it forms a salt with silver nitrate, $AgNO_3 2NH_3$. Its most important use is as an accelerator in development with pyrogallic acid; its action is to render the solution of pyro alkaline, and thus increase the dioxidising power of that substance. The strong solution diluted with nine times its volume of water makes a convenient strength. It has been already stated that the Radical NH_3 unites with acids to form salt.

The principal salts of ammonium are :—

Ammonium Chloride, or sal ammoniac, $NH_4Cl = 53{\cdot}5$.—M.: By leading ammonia gas into hydrochloric acid direct combination takes place. Eq.: $NH_3 + HCl = NH_4Cl$. It is manufactured commercially from the ammoniacal liquor of gasworks by neutralizing with hydrochloric acid and evaporating to dryness, or by subliming the commercial sulphate with common salt. P.: It forms a tough fibrous mass, which can be volatilised without melting. It is soluble in three times its weight of cold water, but only slightly in alcohol, 1 part of the salt requiring 55 of the spirit to dissolve it. The commercial salt usually contains iron, shown by a brown or yellow colour; it can be purified by adding to its solution a little ammonium hydrate (NH_4HO), filtering off the iron hydrate formed, and neutralising the alkaline filtrate exactly with pure hydrochloric acid. The salt and its solutions do not smell of ammonia, and if pure are colourless. U.: As a reagent. U. P.: In making gelatino-chloride emulsion, in making a strong solution of mercuric chloride for intensification, but principally used for salting albumenised paper.

Ammonium Bromide, $NH_4Br = 98$.—M.: By neutralising hydrobromic acid with ammonia. Eq.: $HBr + NH_4HO = NH_4Br + H_2O$. It can also be prepared by many processes of double decomposition, such as the action of a solution of ammonium sulphate on one of potassium bromide. Eq.: $(NH_4)_2SO_4 + 2KBr = 2NH_4Br + K_2SO_4$. P.: It is a fine, nearly white powder, soluble in $1\frac{1}{2}$ times its weight of water, and also in alcohol. U. P.: Sometimes used in the preparation of gelatino-bromide emulsion, but chiefly employed as a restrainer in alkaline development. The action of the potassium and sodium salts of bromide is the same but their restraining power being in proportion to their atomic weights. Ninety-eight parts of ammonium bromide would be equal in effect to 103 parts of sodium bromide or 119 parts of potassium bromide

Ammonium Iodide, $NH_4I = 145$.—M.: By neutralising hydriodic acid with ammonia. Eq.: $HI + NH_4HO = NH_4I + H_2O$, and evaporating to 100° C. By the decomposition of ferrous iodide by ammonium carbonate or barium iodide with ammonium sulphate. P.: Obtained as small yellowish crystals, which are deliquescent and acted upon by light. It is very soluble in water and fairly soluble in alcohol. U. P.: Largely used for making iodised collodion.

Ammonium Nitrate, $NH_4NO_3 = 80$.—M.: By neutralising nitric acid with ammonia or ammonium carbonate. Eq.: $(NH_4)_2CO_3 + 2HNO_3 = 2NH_4NO_3 + H_2O + CO_2$. P.: Obtained as a semi-crystalline powder usually deliquescent. Soluble in twice its weight of water, the solution of this salt propuces cold. U.P.: It is used in the tropics to cool solutions during development, and to prevent frilling.

Ammonium Sulphide, $(NH_4)_2S = 68$.—M.: By passing sulphuretted hydrogen gas through ammonia. Eq.: $H_2S + 2NH_4HO = (NH_4)_2S + 2H_2O$. P.: It is a yellowish liquid of a most disagreeable smell. U.: It is an important reagent in analytical chemistry. U. P.: Used in intensification to blacken the mixture of mercury and silver chlorides produced by the action of mercuric chloride on the metallic silver of the image. Also to precipitate silver from hypo fixing baths.

Ammonium Sulphocyanate, $NH_4CNS = 76$.—M.: By boiling powdered sulphur with a solution of ammonium cyanide. P.: It is a compound of sulphocyanic acid and ammonia, and occurs in transparent deliquescent crystals; soluble in its own weight of water. U. P.: Employed for toning gelatino-chloride printing-out papers. It has also been used as a fixing agent instead of hypo, but its higher price, without any corresponding advantages, has prevented its general use.

Ammonium Carbonate, $(NH_4)_2CO_3 = 96$.—Syn.: Sesquicarbonate of ammonia, sal volatile, smelling salts, etc. M.: Prepared by adding ammonia to one of the acid carbonates. By heating a mixture of sal-ammoniac and chalk. Eq.: $2NH_4Cl + CaCO_3 = CaCl_2 + (NH_4)_2CO_3$. It is obtained as a byo-product in the manufacture of borax. The commercial compound is often very impure. P.: It is a white solid, smelling strongly of ammonia. Soluble in about three times its own weight of water. U.: As smelling salts. U. P.: It is sometimes used for development.

Ammonium Citrate, $C_6H_5(NH_4)_3O_7 = 243$.—M.: Prepared by neutralising citric acid with ammonia. Eq.: $C_6H_8O_7 + 3NH_4HO = C_6H_5(NH_4)_3O_7 + 3H_2O$. P.: It is a deliquescent solid. U. P.: As a restrainer in the dovelopment of gelatino-chloride dry plates.

Ammonium Oxalate, $(NH_4)_2C_2O_4$.—M.: By neutralising a solution of oxalic acid with ammonium carbonato. Eq.: $H_2C_2O_4 + (NH_4)_2CO_3 = (NH_4)_2C_2O_4 + CO_2 + H_2O$. P.: Occurs in fine needle-shaped crystals, soluble in water. U. P.: Used in plantinotype printing paper.

Ammonium Bichromate, $(NH_4)_2Cr_2O_7 = 252$.—M.: By neutralising chromic acid with ammonia. P.: Occurs in powder or in orange-coloured crystals, soluble in water. U. P.: Used in photo-mechanical printing. There aro a large number of ammonium salts of which the above are the principal ones used in photography. In general chemistry, besides some of the above, ammonium molybdate (NH_4HMoO_4), used as a test for phosphates, and ammonium sodium phosphate or microcosmic salt NH_4NaHPO_4) are the most important.

Tests.—All ammonium salts are decomposed with evolution of ammonia when heated with a hydrate of an alkali (KHO or NaHO) or alkaline earthy metal. Tartaric acid gives from a concentrated solution of some ammonium salts a white crystalline precipitate. Platinic chloride gives a heavy yellow precipitate if the solution is not too dilute.

(*To be continued.*)

Liverpool Camera Club.—Usual meeting on the 24th ult., Mr. T. Edwards presiding. Samples of the Ilford P.O.P. were handed to the members, and the new Bynoe printing frame was placed upon the table for inspection. Mr. H. Handley then read a most interesting and carefully prepared paper upon "Optics for Amateurs," illustrating it with a number of drawings. The subject being well received, Mr. Handley promised some further remarks upon it at a subsequent meeting.

How to Make a Set of Photographic Apparatus.

By H. J.

(*Continued from page* 140.)

CHAPTER V.

THE TRIPOD STAND.

COMPARED with the subjects of the previous chapters this will be mere child's play, so that a great many who may not have the necessary skill or pluck to attempt the camera and slides will be able to make the tripod with ease, and as it is (or I always think so) a very expensive piece of apparatus compared with the rest of the kit, I hope to find many of my readers making their own. For this reason, and to cater for all classes as well, I shall describe

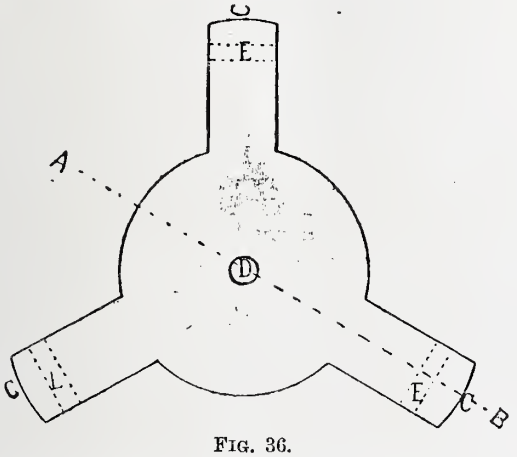


FIG. 36.

two kinds of stands. The first one will be very simple and require scarcely any fittings, and the other a first-class stand fit to go with any kit, and which may be carried anywhere by anyone without any fear of its being laughed at, though it is home-made. I will describe the simpler one first, and the first part to be made will be the top. For this we shall want a piece of ash or any kind of tough wood about 6 in. square and $\frac{3}{4}$ in. thick. Plane this up both sides, bringing it to an equal thickness throughout, though what that thickness is does not matter to a trifle. Then strike a circle as large as the wood will allow, also another smaller circle (about $2\frac{1}{2}$ in. in diameter) from the same centre, and still another one of $\frac{5}{8}$ in. diameter. Now set the compasses to the diameter of the larger circle, and this being one-third of the circumference, will give the three centres of arms as at C C C, fig. 36. These should be so arranged that the grain of top does not run across either of the arms; it will be right if it runs in the direction of section line A B. On each side of the three points (C) now set out $\frac{5}{16}$ of an inch, this is the thickness, or I should say the width of arm, and marks must now be drawn from these points to the outside of the smallest circle, that is the $\frac{5}{8}$ in. one; and then the waste must be cut out by sawing outside of each of these marks as far as the middle circle, and then continuing the cut round the circle. When this is done in all three places the top will present the appearance of fig. 36, and only requires finishing off with chisel and spokeshave, and a hole bored through the centre D, figs. 36 and 37, and holes bored through each of the three arms about half an inch from the ends E, figs. 36 and 37, and the top is finished. Now for the legs. Prepare nine pieces of wood 2 ft. 9 in. long, 1 in. by $\frac{5}{8}$ in. Ash is a very good wood for these, but it is very heavy and rather difficult to work as well; a better kind is bass wood, or, as it is called in some places, American white wood; this is cheap and as easy to work as deal, and looks very nice as well, so this is the kind I should recommend. Now plane all these pieces up straight and square, bringing them to an even thickness and width, and then lay them all on the bench (or any flat surface), edges upwards, and square across about a quarter of an inch from one end; then $1\frac{1}{2}$ in. from this mark square across again then take three of the pieces away, and turn the others round, taking care not to shift any of them, and mark the other end in the same way, only instead of the marks being $1\frac{1}{2}$ in. between, they must only be half an inch. These marks are all on the edges. They must now be squared over on the sides, or one side will do, and on the marks farthest from each end. In the centre of the side in width bore a three-sixteenths of an inch hole (the marks, it must be borne in mind, are for centre of holes), with a centre bit is the best. The three pieces which were only marked at one end must also be bored at that end, and the nine pieces can then be cut off at the other marks, thus leaving six pieces with holes half an inch from one end, and $1\frac{1}{2}$ in. from the other end, and three pieces with holes the same as the latter. The ends can be left square, or they can be rounded; the latter looks best if you like to take the trouble to do it. The three pieces with only one hole bored must now be cut off to 2 ft. 7 in. long from the centre of the hole, and the ends can now be tapered to a point or nearly so.

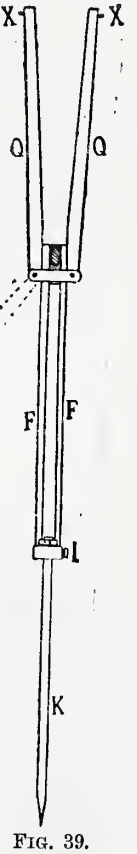


FIG. 39.



FIG. 37.

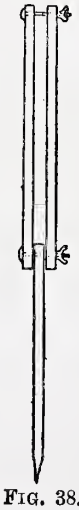


FIG. 38.

The stand can now be put together. First pass a bolt through one of the holes in one of the longest pieces (those $1\frac{1}{2}$ in. from the end), then through one of the shorter pieces, and, lastly, another long piece; then screw up. Build up each leg in this way, and then place one arm of the top between the two pieces at the top end of one leg, and insert a bolt through the holes in each; put on the other two legs, and the stand is finished, and will be found very rigid; and as there is nothing about it to get out of order, it will be found very serviceable, while the cost is very little, all the fittings required being the six bolts. To pack the stand, take off the legs by taking out the top bolts, putting them in their place again, then just slack the middle bolts and fold the bottom part of leg between the other two; the three legs will thus pack into a space of 3 in. by 2 in., and 2 ft. 9 in. long, and the top will fit in camera case, and will be found far better than the triangle commonly in use. The sizes given above are to carry a half-plate camera; for a quarter-plate a smaller top and slighter legs would do, but it is a great mistake to have a

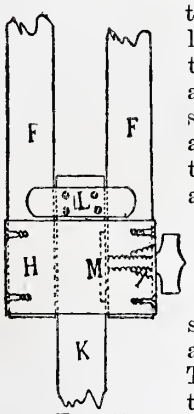


FIG. 40.

flimsy stand, this alone, I believe, causing as many or more failures than any other one thing connected with the apparatus.

I will now pass on to stand No. 2, which will be a more complicated affair, though I must confess that, apart from looking better and packing into a smaller space, it is no better than the above, so that if you go in for use only, and do not care for appearance, you will make stand No. 1, while if you wish to be reckoned a photographic "masher" you will go in for No. 2. The remarks I made about the wood before will apply equally here, but if a handsomer stand is wanted, I should recommend black walnut, certainly mahogany could be used, but it is not suitable, not having a straight enough grain for these slight pieces. Whatever wood you choose you will require as follows:—

Three pieces 1 ft. 9 in. long, $\frac{7}{8}$ in. by $\frac{1}{2}$ in. for bottoms,
Six pieces 1 ft. 11 in. long, $\frac{3}{8}$ in. by $\frac{1}{2}$ in. for second joints.
Six pieces 1 ft. 9 in. long, $\frac{7}{8}$ in. by $\frac{5}{8}$ in. for top joints,

These are the finished lengths and sizes, so that they should be cut out a trifle longer, and after planing up squared off to these lengths. We also require three pieces 2 in. long, 1 in. by $\frac{1}{2}$ in.; these must hold full thickness to allow the other pieces to slide easily. All the above being prepared, take two of the longest pieces and one of the short blocks and screw them together with the block in the middle as at fig. 41, F F being the longer pieces, and the shaded portion G the block. Now on the other end of the two pieces thus joined, screw on the brass plates H, fig. 40, one on each side; these plates are bent, as shown in fig 43, which is a perspective sketch of one of them, and therefore they are screwed on from the bent piece into the sides of wood as shown. But before fixing these plates on one side a plug nut must be inserted (see I, fig. 40) for the milled-head screw; the proper place for this nut can be found by placing the two plates in position and marking it on the wood, and after inserting the nut the plates can be screwed on permanently. Now take one of the bottom pieces, and having pointed one end, and put on a shoe if you intend having any, then slide the other end between the brass plates H (see fig. 40, K being the bottom piece), and screw on the small guide plates L, one on each side. But I find I am anticipating again; before screwing on the plates L, mark where the screw comes, and then insert the small plate M in the bottom piece; this is to take the pressure of the screw, which would otherwise soon damage the wood. The bottom piece can now be put in and plates L screwed on, and then this joint is finished, and we will proceed to the top one. The first thing to do with this is to screw on the long brass plates N, fig. 41, across at the bottom of block, screwing both into the latter and into the side pieces, and leaving the plate an equal distance over each side, one of these plates being screwed on each side. The top pieces must be taken in hand; these must be bevelled on one side for about 2 in. from end, so that at the extreme end they only measure half an inch, and as they are $\frac{5}{8}$ in. thick, it will be $\frac{1}{8}$ in. off to nothing, 2 in. higher up. This reduced end must also have a hole bored through it the same size as those in brass plates, and the ends rounded off. Striking the circle from the centre of the hole, a small brass plate, O, can also be let in on each side of reduced ends of top pieces. Now lay the latter on one side, and take the middle pieces F, and about half an inch from the end glue in a small pin on each side as shown by dotted lines at P P, fig. 41, leaving them projecting about $\frac{1}{4}$ in., then take the top pieces again, and placing the ends between brass plates fasten them there temporarily with a screw passed through the hole; then laying the whole flat on bench so as to keep it level, press the top piece against the pin P so as to mark them, when they can be taken out and a small hole made, so that when they are opened up the pin will enter it and it will be held firm. It is important that this hole be made at the right place, and also that it is the right size to fit the pin properly, or it will allow side play and cause the stand to be shaky. The top end of the top pieces can now be rounded (but the opposite way from the bottom end), and the plates let in which fit on the pins in the top, or the pins may be on the legs. I have shown the latter in the drawings; see fig. 42. They will both be let in the same way, so that it makes no difference which way it is, only if the pin is on the leg, a small hole must be made in the pieces F to receive it when folded. The folded pieces can now be pinned on to the brass plates N, and this leg is now finished, and of course the other two must be done in the same way, taking care that the plates, etc., are exactly the same distance apart in all three, and also that the milled-head nut which fixes the bottom sliding piece when opened, is on the same side in all, or they will look odd. You will be able to see now the reason for the bottom ends of top pieces being bevelled; it is to spread the top open, so that the ends can be pressed together to insert the pins into the holes in turntable, or triangle, or whatever kind of top you use, and they will spring apart themselves and keep firm, no stretcher being required. The method of folding is shown in fig. 39, which shows one leg complete, the dotted lines also showing one top piece in the act of being folded down, and of course the bottom piece slides up, the whole when folded being very neat and compact. The three legs pack into a space of 3 in. by $2\frac{3}{4}$ in., and 1 ft. 11 in. long; this is for a stand 5 ft. high when erected. For a 4 ft. 6 in. one, the length when folded would be nearly 3 in. less.

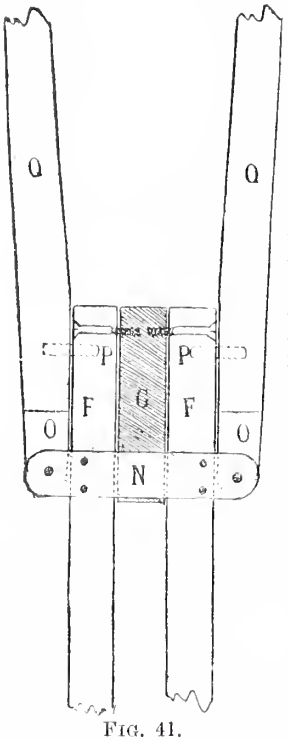


FIG. 41.

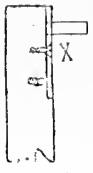


FIG. 42.



FIG. 43.

If you have a turntable in baseboard the stand is now finished, but for those who are not so fortunate I will now describe a top for the stand, so as to make it a complete article for all, and will also describe an arrangement which will dispense with the screw for fixing camera to stand, and which will allow it to be fixed or removed instantly. We will first make the top itself. This is of the shape shown in fig. 44 (not taking any notice at present of the triangular pieces); it is, as will be seen, struck out entirely by circles; and as the shape given need not be adhered to strictly, I will not take up space in giving instructions for marking it out, but content myself with simply stating that for a half-plate I should recommend the top to be six inches in diameter; and a good way to make it will be to cut out three pieces to the pattern, each $\frac{1}{4}$ in. thick, and then screw and glue them together, crossing the grain of every one of them with the one next to it; by doing this you will be able to cut away much superfluous wood, which otherwise would have to be left for strength. A small brass plate can be screwed on at each place where the legs

come, as at U, fig. 44, the dotted lines showing the place for holes, to take the pins on legs. I think you can understand by this time how to make the top, so I will go on to the arrangement for fixing to camera. For this cut out a piece of $\frac{3}{8}$ in. wood, a triangular piece as at S, fig. 44; the particular shape does not matter, but the long and short side T T must be parallel, and a rabbet must be made on these edges as shown in fig. 45, which is a section; now prepare two other pieces of the same thickness and about 6 in. long, rabbetted on one edge in the same way as the others; these pieces must be screwed across the baseboard of camera, at such a distance apart that the piece S will slide easily, but without any play between them, the rabbets of course holding it there.

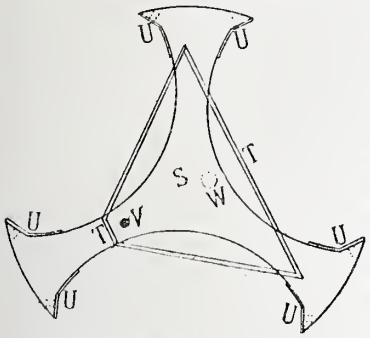


Fig. 44.

The triangular piece can now be fixed to the tripod top with one screw through the narrow end as at V, fig. 44; then bore a hole through both top and the other piece in the place shown by dotted lines at W, and in this hole in S insert a plug nut, so that a milled-head screw can be passed up through the hole in top into the nut, and will clamp them both together. Now to fasten the camera to stand it is only necessary to slacken the above screw a little and slide the camera on top so that the grooves in the two pieces on baseboard engage in the tongue on S; and give the screw head a turn and it is firmly fixed, and can be dis-

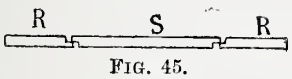


Fig. 45.

engaged as easily. This will be found a far more convenient plan than being obliged to turn the camera screw quite out every time the camera is taken up or down, and can be easily adapted to existing tripods.

The following is a list of fittings required for both No. 1 and No. 2 stands, and though I have left them till last, they should be obtained first, so as to be able to work them.

	s.	d.
No. 1 Stand.		
Six bolts with wing nuts	2	0
No. 2 Stand.		
Six plates, marked H in figures	2	0
Six plates, marked N in figures	2	0
Twelve plates, marked O in figures.. ..	1	6
Six plates, marked L in figures	1	0
Three plates, marked M in figures.. ..	0	3
Six plates, marked X in figures	1	6
Three milled-head screws and nuts ..	1	0
For Tripod Top.		
Six plates, marked U	0	6
One milled-head screw and nut	0	4

My next subject will be a hand-camera.

DESCRIPTION OF FIGURES.

Fig. 36. Top for No. 1 stand.
„ 37. Section of ditto on line A. B.
„ 38. Leg of ditto complete.
„ 39. Leg of No. 2 stand complete.
„ 40. Detail of bottom joint of ditto.
„ 41. Detail of top joint of ditto.
„ 42. Detail of extreme top of legs.
Fig. 43. Sketch of binding plate H.
„ 44. Top for No. 2 stand.
„ 45. Section of arrangement for fixing camera to stand.

REFERENCES TO LETTERS.

C. Ends of tripod top No. 1.
D. Hole for camera screw.
E. Holes for bolts to fix legs.
F. Main pieces of middle part of legs for stand No. 2.
G. Block between ditto.
H. Binding plate for ditto.
I. Plug nut for screw to fix sliding piece.
K. Bottom part of leg (sliding piece).
L. Stop plate for ditto.
M. Small plate to take pressure of screw.
N. Plate to hinge folding parts of legs.
O. Plate to take wear of pin.
P. Pin to keep top joint of leg firm.
Q. Top or folding part of legs.
R. Side pieces to fix on baseboard of camera.
S. Piece to slide in ditto, and fixed to top.
T. Rabbetted sides of ditto.
U. Brass plates to take pins of legs.
V. Screw to fix S.
W. Plug nut for milled-head screw to clamp camera to stand.
X. Pins to fix legs to top.

(To be continued.)

Harmonising Harsh Negatives.

(*Continued from page* 162.)

A method of intensifying the shadow detail without increasing the density of the high lights to a greater extent by bleaching the surface of the negative with mercury, stopping the action before the whole thickness of the high lights is affected, washing well, and blackening with any of the usual agents, was demonstrated before us by Mr. Roland Whiting and will be found useful.

A similiar method has been repeatedly advocated by Mr. Chapman Jones, the agent being the uranium intensifier. As this intensifier performs its work at one operation it is claimed that the action can be stopped as soon as the shadow detail has been sufficiently strengthened and before the lights have been intensified right through. I tried this on several occasions about a year ago, but was never successful in stopping the action at the right moment. The red colour of the intensified parts differing so much from the normal appearance of the negative makes the process a little confusing, and it is not easy to estimate the value of the added strength. At the same time I accidentally found out that ammonia would entirely remove the red deposit, and hoped that by intensifying the negative fully and afterwards painting out the red stain from the lights with ammonia I might obtain the desired results. I found, however, that it was difficult to control the action of the ammonia when dealing with fine lines, sprays of leaves, etc., and gave up the use of it. I see that Mr. J. Hodges has an article in the number of the *Quarterly* previously referred to, in which he advocates this method. He shows prints from negatives before and after treatment, to which I call your attention.

You will see from these that Mr. Hodges works his method with complete success. His acknowledged skill in all branches of photographic work entitles his method to consideration and trial by those who have time to acquire the manual dexterity necessary to work it successfully. I think the method will be found most useful when broad masses of light half-tone merging into the shadows are to be treated. It must be remembered that both Mr. Chapman Jones's and Mr. Roland Whiting's methods of intensifying the shadow detail also strengthen the high lights. Neither of these methods, nor that of Mr. Hodges, will be found satisfactory when the negative is already too dense in the high-lights. Even if we were by any of these methods able to strengthen the shadow detail to such an extent that the light half-tone would print out before the shadows were blocked up, the negative would be so dense that printing would be enormously prolonged to the deterioration of the printing paper.

What we require in such cases is that the reducer should act upon the high lights at the back of the plate, and leave the shadow detail unaltered. Should the latter be then too thin, we can intensify the whole negative without the brilliancy becoming too pronounced.

I desire to call your attention to a method of working which will yield such a result.

Shortly after giving up the use of the uranium intensifier in connection with hard negatives, I observed this formula and instructions in the Editorial columns of the AMATEUR PHOTOGRAPHER (October 2nd, 1891) :—

"The only way to reduce the dense portions of a very hard negative without reducing the shadows is to wash free from hypo and then immerse in :

Hydrochloric acid (pure)	9 drops.
Bichromate of potash	30 gr.
Alum	10 „
Water	1 oz.

till thoroughly bleached, then wash well for an hour or more, and redevelop with a weak and well restrained ferrous-oxalate developer, and stop the development as soon as the shadows have developed and before the high lights are reduced right through, then refix."

This appeared to promise well, and I tried it. For redevelopment I used the ferrous-oxalate I had prepared for Alpha paper, as it met the requirements if weak and well restrained.

Repeated trials gave me nothing more than a ghost image after prolonged development when viewed after fixation.

On making inquiries I was told by a worker whom I considered an authority on the subject, that the chloride of silver image produced by rehalogenisation was so insensitive that a prolonged exposure to daylight would be necessary.

This necessitated previous drying to prevent irregular action and, of course, added to the trouble of the process.

I found after exposure to daylight that the image developed readily enough, but a new difficulty arose. It was impossible to tell when the action of the light had penetrated to a sufficient depth into the film, and if it went too far the hypo was unable to dissolve out the orange-coloured light product, with the result that while the shadow detail was by development of a black tone, the undeveloped high lights, if solarisation had taken place, were of a strong non-actinic orange tint, and for printing purposes just as strong as at first. The process seemed too uncertain to be of much practical use, and I abandoned it.

Some time after this, Mr. Chapman Jones referred to a similar process in which chloride of iron was the rehalogenising agent, the result, of course, being again chloride of silver.

I felt that such a process, if it could be worked with certainty, would be most useful ; and it occurred to me that if bromide of silver could be substituted for chloride of silver as the haloid salt, it would be much more sensitive to artificial light, and the whole operation could be carried out in the evening. I was acquainted with, and had used, Captain Abney's formula for resensitising light-struck but undeveloped plates, viz., bichromate of potassium and bromide of potassium. This is inert upon the metallic silver image produced by development, but knowing the power of bichromate of potassium as an oxidiser to assist the acids in combining with the metals, I believed that the addition of nitric acid would accomplish my purpose. Clearly it was necessary that the bromide of potassium should be present from the first to change the nitrate of silver as it was formed into an insoluble salt, or the image would be washed away. A few trials led me to adopt the following formula and method of working :—

Bichromate of potassium	10 gr.
Bromide of potassium	5 „
Water	1 oz.

Bathe the plate and allow the solution to permeate the film. Pour the solution off and add to it five drops of nitric acid. Again flood the plate and the image will be converted into bromide of silver. Allow the action to proceed through the film. Bathe in three changes of alum to remove the bichromate and harden the film, and wash thoroughly in water. As the operations are carried out in white light, such as that of gas or a lamp, the plate is amply exposed by the time the washing is completed.

For development I abandoned iron as being troublesome to make up when a single negative had to be treated, and had to be followed by a clearing bath before fixation. I tried hydroquinone as being something of the same character, but found that it frilled the film off the plate, whether the caustic alkalies or the carbonates were used. The previous long soaking would account for this. I then tried pyro, and found it quite suitable. Any preservative may be used (my favourite is nitric acid), but as there is nothing on the plate but the image to be affected by the developer, there is no necessity to use a bromide. A small trace may be useful to control development, but if any bichromate of potassium remains in the film it will unite with the bromide, and convert the image back into bromide of silver as fast as it is developed. The formula I generally use is :—

Pyro	2 gr.
Ammonia	2 min.
Bromide of potassium (if used at all)	½ gr.

As the shadow detail lies on the surface it will first be developed, the half-tone will follow, and the high lights will remain white when viewed from the back of the plate for some time. As the surface of the film will veil over as soon as the developer begins to act, the progress must be judged entirely from the back of the plate. The only judgment required in the process is in stopping the development at the right time. If stopped too soon, the negative will be flat; if carried too far, the negative will still be hard.

It will be well to have ready for reference a print from the negative in which the shadows have been printed to their proper depth. When the lightest half-tone which shows in the print is nearly but not quite blackened through by the developer, on viewing the plate from the back the action should be stopped, the plate washed and transferred to the hypo, which will speedily dissolve out the undeveloped silver in the high lights, leaving the negative much thinner in the high lights than it originally was. A little practice with waste negatives will give the required power of judgment.

A negative which is hard from under-exposure, and one which has been fully exposed but is hard from over-development, will not present the same appearance during redevelopment. after rehalogenisation. If the former be redeveloped right through, the high lights will appear black at the back of the plate, the high lights in the fully exposed negative will never appear black, however far the redevelopment may be pushed, and as the layer of white-coloured silver present in this case will not be dissolved out by the hypo, an allowance for this must be made in redevelopment, or the negative will still be too dense. There is no theoretical objection to the negative being again treated by the process to obtain the required reduction, but in practice there is an additional risk of stains appearing the second time. It is better to err on the side of under-development and intensify if necessary.

I found the method so successful that I should probably never have tried the chloride method again, and would have supposed it to be too uncertain for practical work. When, however, I was asked to make this process the subject of a paper, it became necessary to investigate the matter a little more closely, lest I should lead some one astray. By the experience I had acquired, I suspected the "weak and well-restrained ferrous-oxalate developer" to have been the cause of my early troubles. On rehalogenising a negative by the chloride process, I found that the exposure to lamp light was quite sufficient if developed with pyro, and the image all that was required. I would, however, in future omit the alum from the solution, and reduce the bichromate of potassium to 10 or 12 grains per ounce, and the hydrochloric acid to 5 drops. We have then two methods to work with, and though I think the bromide is a little more under control, this probably arises from my having had more experience with it.

In this process, as in all others, great cleanliness is required, and the plate must have been thoroughly freed from hypo before proceeding to rehalogenise. If hypo or other chemicals be present, thin patches and dark spots will show. If there are grease spots or finger-marks on the plate, irregular action will take place. It is best to take but one trial print from the negative, and exercise great care in doing so if rehalogenisation be thought needful. When operating on old negatives I wash them gently with dilute ammonia to get rid of, if possible, grease spots before beginning the process.

(To be continued)

Lewisham.—On 2nd inst., Mr. Alf. H. Miles, Vice-President, in the chair, several amendments to the rules suggested by the Committee were passed unanimously, one being that the short title of the Society be "The Lewisham Camera Club," instead of "Lewisham High Road." In the unavoidable absence of Mr. Child, his paper, "Photography for a Shilling," was read by Mr. Davidson. He gave the method of making nitrate of silver out of a shilling, and sensitising a collodion plate with it.

Holiday Resorts and Photographic Haunts.

COUNTY ANTRIM.

By C. E. S.

If any reader of the Amateur Photographer is still in doubt as to where to spend his autumn holiday, the advice of an old amateur photographer is, "Go to County Antrim." In this short article I shall endeavour to give some directions to help the intending visitor to that lovely district; a district not surpassed in the United Kingdom for the combined charms of grand open ocean, high cliffs, barren heather-covered hills, brawling trout streams, and objects of antiquarian interest. Also, not the least important point, it is one of the few districts in Ireland where really clean and comfortable country inns are found, and those with very moderate charges.

How to Get there.—The quickest and best way to reach Belfast, the starting point of the tour, is by the new mail route via Stranraer and Larne. Leaving Euston at 8 p.m., one arrives at Stranraer about 6.30 the next morning, crosses the channel in exactly two hours (thirty minutes of this being in the smooth waters of Loch Ryan), and reaches Belfast at 9.10 a.m. The 3rd class and cabin return is £2 5s. 6d.

Some days might well be spent in Belfast, making short excursions in the vicinity, for no large city in the British Isles has more lovely environs. Specially worthy of visit are the Cave Hill, overlooking the city; Divis Mountain, from which a fine view of Lough Neagh is obtained; the coasts of Belfast Lough, and the valley of the River Lagan. Plates, etc., may be had at Rodman's and Noill's, both in Donegall Place, a leading thoroughfare.

The best way to see the country is to go by train to Portrush, thence by the splendid coast road to Larne, and thence by train to Belfast. A circular ticket for train and car may be had for £1, but far the best way is to walk the coast road, or if three or four persons are together, a special car may be taken for the party at an expense to each not much greater than that of the circular ticket; which expenditure is quite compensated by the fact that one can stop where one chooses to photograph. The railway journey from Belfast to Portrush occupies about two and a half hours, and gives the traveller many glimpses of charming country. It is well worth while dropping a train at Antrim to get a shot at the Round Tower, one of the most perfect specimens of these curious and interesting structures which have survived the shocks of ages. If one does not care to stop, a look at the tower, rising high over the surrounding trees, may be had from the right-hand side of the train just after leaving Antrim.

Portrush is the most fashionable summer resort in the north of Ireland, but it is still quiet and unsophisticated compared with such places as Scarborough, Brighton, or Blackpool. It boasts of one really first class hotel, the "Northern Counties," and many smaller but still comfortable and good ones. It is much better for the photographer, however, not to stay in Portrush, but to take the electric tram direct from the station to the Giant's Causeway.

The Causeway Hotel, owned by the tram company, is most excellent and moderate, and Kane's Royal Hotel close beside it is a good second-class house. Here one is in the very midst of the finest parts of the coast. The road between Portrush and the Causeway, about eight miles, runs first through the Golf Links of the Royal County Club, then along the top of fine limestone and basalt cliffs, and past Dunluce Castle, an old ruin in as fine a position, and in pre-gunpowder days as impregnable as any castle on British coasts. On this road a dozen plates may easily be used. From the hotels it is only a few minutes' walk down to the Causeway.

The pictures to be had of the Causeway itself are more interesting than beautiful, but several fine views of the cliffs may be got. Then the amateur photographer should by no means miss a walk along the Causeway Headlands to Pleaskin Head. It would be hard to name a limit to the number of views that are worth securing along this path, specially if one has a fairly good head and does not mind going pretty near the edge of the cliffs.

If the tourist has plenty of time at his disposal, he should, while staying at the Causeway, make short day trips along the coast to White Park Bay, Carrick-a-rede Rope Bridge, and Kinbane Castle, but if time is short he may visit them on his way round the coast, returning to Belfast. All the cars stop at Carrick-a-rede, as the frail ropework structure connecting the island with the mainland by bridging over a chasm 60 ft. wide, and 90 ft. deep, is one of the "sights" of the coast. No one should attempt to cross the bridge unless they have a very good head, but if one does cross, a capital picture of the cliffs on the mainland is to be had.

Kinbane Castle is not seen if one is travelling on the public cars, for they do not stop long enough for one to visit it. Though not so grandly situated as Dunluce, it is well worth seeing, and some good views can be got from the steep bank on the north side of the little bay, showing the castle with Ballycastle Bay, and the splendid profile of Fair Head behind it.

The whole drive from Portrush to Larne by the Coast Road, about eighty miles, may be done in one day, but this is most tiring, and gives no chance of work except to a hand-camera man, and even he would lose the best bits. At least three days should be taken to see it properly. The first day, from Portrush or the Causeway to Ballycastle, includes the points of interest I have mentioned, and much pretty scenery round Ballycastle, which is a village lying near the shore at the foot of Knocklayd, a hill about 1,700 ft. high. The Marine Hotel on the shore is most comfortable and moderate.

From Ballycastle to Cushendall, about eighteen miles by the Coast Road, one *may* drive, but by so doing one misses the finest part of the coast. The best plan is to drive about two miles from Ballycastle, and arrange to meet your car at Torr, five miles further on, while you explore the wild promontory whose point is Fair Head, one of the boldest heads on the whole sealine of Ireland. It is 600 ft. in height, not a sheer cliff, but formed like the ram of a modern ironclad. Beyond Fair Head is Murlough Bay, where some charming pictures may be got, as also at Torr Bay, where the road is taken again.

The "Glens of Antrim" Hotel at Cushendall is a delightful old-fashioned inn, where one revels in cream, butter, eggs, and trout in a way to dream of afterwards, when at work again in the busy town! If a day can be spared it should certainly be spent in an excursion up Glenariff, a lovely glen opening on the coast just South of Cushendall, where flashing waterfalls, quiet pools, abundant foliage, and heather-covered hills will soon make one long for a roll holder and film for a few score pictures, if not supplied with it. From Cushendall to Larne the road was generally almost at the water's edge, and many bits will catch the eye of the keen photographer as worthy of a plate. The only object of special interest passed is Garron Tower, the fine summer residence of the Londonderry family, perched on a natural terrace high up on the hill-side above the road. The views from this terrace are magnificent, and the tower itself is worth a visit.

At Larne the coast trip ends, and thence the steamer may be taken to Stranraer, or the train to Belfast, and if any amateur photographer returns home from this trip without a good stock of pictures that will afford many a pleasant hour to himself and his friends during the dark days of winter, it is certainly his own fault, and he may as well give up photography at once!

East London Phot. Soc.—Mr. M. A. Wilkinson, the Hon. Sec. of the above society, has removed to 28, Shacklewell Lane, Kingsland.

Oxford Dark-Room.—Mr. E. Claridge Druce, of 118, High Street, Oxford, has a dark-room which is free to customers for changing plates only. A charge of one shilling is made for developing.

An Unusual and Interesting Exhibition. — The National Chrysanthemum Society, which holds three large exhibitions of chrysanthemums during the year at the Royal Aquarium, Westminster, will, on Wednesday and Thursday next, the 7th and 8th inst., open the first of these, and great interest attaches to this early show from the fact there will be on view a number of blooms of chrysanthemums sent from Wellington, New Zealand, each bloom frozen in a block of ice, which has been brought to this country in the refrigerating chamber of one of the steamboats employed to bring over frozen meat. These flowers opened in April last, the month of the blooming of the chrysanthemum at the Antipodes. When fully matured each bloom was frozen in a block of ice, as above stated, and it is said the freshness and colours are exceedingly well preserved.

Toning of Chloride Prints.

BY WALTER D. WELFORD.

IT is quite out of my power to reply direct (spite of stamped envelopes) to all the letters I have received about the bi-carbonate of soda toning bath for gelatino-chloride prints. And at the same time I must say that I think the majority of the writers are a little hasty in their conclusions.

It is perhaps more especially unfair to complain of faulty action when using it for other papers than that manufactured by the Eastman Company, because I distinctly stated that it worked best with that brand, and to do the bath full justice that paper ought to have been used first.

The majority of the complaints (and I am of course only referring to fault finders now) made are, that it fails with the Ilford P.O.P. An unpleasant yellowish tone is the general result, it appears. I find it so myself after numerous trials, and therefore do not recommend it for that brand of paper. I can tone it without this defect, but until I am certain, prefer to further test the modification.

I fear that in saying this bath would tone several brands, as well as Eastman's "Solio," I was hardly emphatic enough in pointing out that it was *more* suitable for the latter. It certainly does tone other brands, but the results are not the same, and the tones obtained upon one or two brands would to some people perhaps be objectionable, because it must be remembered that tastes vary exceedingly in the matter of print tones.

In your last issue appear good-natured criticisms by Mr. Howson and your good self. To the former I can confidently assert that the sulpho-cyanide bath, however strong it may be, will not tone the prints to the requisite grey-black nearly so quickly as will the bi-carbonate. Moreover the tone is more of a purple or brown-black than the grey tone I obtain. To your own remark that the bath is far too vigorous and is improved by slowing its action, I can only assert that slowing the action gains nothing (except as I shall mention later on), and moreover makes the resulting tone warmer. This I have already pointed out. You are quite right in your assertion, and yet my claim for great speed and grey-black tones is not affected at all by it. Instead of 9 oz. I have used 12 and even 16 oz. of water, with the result that the action is much slower and the tone warmer. But as I was striving after a grey-black tone and rapid working, I gave the formula that best accomplished this end.

One difficulty that I had specially in view to avoid, was the appearance of uneven toning in the finished print. In some (I won't say all) of the baths that have been before us hitherto it can always be avoided by care in making the bath, and by earnest work in keeping the prints in motion. The time occupied, and the great care necessary to produce evenly-toned prints was to me a nuisance. Moreover, presuming a mark does accidentally appear, with these baths it generally remains and either further toning will not remove it, or if it does the print becomes considerably over-toned, flat, and of unpleasant colour. That is not possible with the bi-carbonate bath. A proof of this can be obtained by half-toning a print first, and then finishing it. No mark will be visible and no difference in tone. On the other hand, weakening the bath tends to make its action just the same as the others, and careful motion again becomes necessary.

As a sample of silly complaints, let me quote one: "Your bath gives dreadfully black tones, and I can't get the delicate red and brown tints I prefer." Fancy having a man like that to deal with. It is a good job that I cannot find time to write that man direct, or my letter might be of "too warm a tone."

Photography in Geology.

THIRD Report of the Committee, consisting of Professor James Geikie (Chairman), Dr. Tempest Anderson, Dr. Valentine Ball, Mr. James E. Bedford, Professor T. G. Bonney, Professor W. Boyd Dawkins, Mr. James W. Davis, Mr. Edmund J. Garwood, Mr. William Gray, Mr. Robert Kidston, Mr. Arthur S. Reid, Mr. R. H. Tiddeman, Mr. W. W. Watts, Mr. Horace B. Woodward, and Mr. Osmund W. Jeffs (Secretary), to arrange for the collection, preservation, and systematic registration of photographs of geological interest in the United Kingdom. (Drawn up by the Secretary).

In presenting their third report your Committee desire to observe that although the number of photographs collected during the past year shows a decrease as compared with the two previous years, yet a greater proportion are of high scientific interest, and illustrate features of real geological importance. At first it was unavoidable that a considerable number of those received were only "geological" photographs in a general sense. As explained in the last report,* it was not desired to restrict this term too greatly; but without some limit the collection would cease to represent typical geological features of the United Kingdom, and become simply a collection of landscape photographs.

The number of photographs received and registered from the date of the last report (August, 1891) to the end of June, 1892, is 112, bringing the total contents of the collection to 700. Owing to the early meeting of the Association this year, the list was closed before a complete twelve months' work could be recorded, and results have not yet reached the Committee from several of the societies which have undertaken local surveys for geological purpose. The following summary shows the geographical areas represented in the collection:—

ENGLAND:		Montgomeryshire ...	3
Berkshire	3	Northumberland ...	17
Cheshire	30	Shropshire	21
Cornwall	18	Somerset	12
Cumberland	2	Staffordshire ...	3
Derbyshire	21	Wiltshire	5
Devonshire	21	Worcestershire ...	2
Dorsetshire	18	Yorkshire	172
Durham...	16	NORTH AND SOUTH WALES	72
Hampshire	2	SCOTLAND	52
Hertfordshire	4	IRELAND	123
Isle of Man	22	MICROSCOPIC SECTIONS	12
Kent	17	Total ...	700
Lancashire	30		
Leicestershire	2		

It will be seen from the foregoing that only about half of the English counties are represented in the collection, while the small amount of the contributions from several of those named in the list shows that considerable work is yet required to be done towards the completion of the scheme the Committee have in view.

An exhibition of geological photographs was arranged in Section C at the Cardiff meeting.

Your Committee met at Cardiff and discussed details of the work. It was decided, on the recommendation of Dr. Tempest Anderson, to adopt a standard mount of uniform size for preserving the photographs. The style of mount adopted (known as the Zaehnsdorf "self-binding" mount) is 15½ by 12 inches, and is fitted with a special guard perforated at regular intervals for binding. This is of sufficient size to hold one whole-plate, or two half-plate, or four quarter-plate views. The views when mounted may be readily arranged in any desired order, and additions or substitutions effected. A supply of mounts has been obtained, and the collection is now in process of mounting and arrangement. Forms containing descriptive details of the photographs are affixed to the mounts. It has been arranged to supply these standard mounts to donors of photographs who are willing to mount their own views; otherwise the cost of mounting will fall on the Committee. It is found necessary to have the photographs properly mounted, not only for greater convenience of reference, but also to preserve them from possible injury by handling. The value of the collection is already considerable, and will increase as it grows in numbers.

A new circular (No. 4) was issued by the Committee in November, and addressed to a large number of geologists and photographers (both professional and amateur), and also to scientific and photographic societies in all parts of the kingdom. While the Committee much appreciate the help that has been afforded from so many quarters, they would urge upon geologists generally the desirability of promptly assisting the scheme in order that their work may be proceeded with as quickly as possible. The Committee are indebted to the editors of *Nature*, the *Literary World*, *English Mechanic*, *Photographic News*, AMATEUR PHOTOGRAPHER, *Globe*, *Illustrated London News*, and other periodicals for giving prominence to their scheme for collecting and registering geological photographs.

The use of photographic processes for illustrating works on geology is becoming more frequent. During excursions of the

* Report, 1891, p. 321.

Geologists' Association, several photographs have been taken by members from which "tint-blocks" have been made to illustrate papers in the "Proceedings" of the Association. In several counties active efforts are being made by local bodies for photographic surveys, and it is hoped that important geological phenomena may be made a feature of these surveys, and that copies of such photographs will be added to the collection formed by your Committee.

Reference was made in the last report to the appointment of a Committee on photographs by the Geological Society of America. The plan of this Committee is laid practically on the same basis as that of the British Association, the objects being (1) to make a photo-geological survey of America: (2) to exhibit the collection at the annual meetings of the Society; and (3) to publish a register of photographs received. The first register for 1890 contains a list of 293 photographs.

Your Committee deem it satisfactory that steps are thus being taken to carry out their own object in other countries.

Mr. C. J. Alford, F.G.S., mining engineer (of Suffolk House, Lawrence Pountney Hill, London), offered a series of geological photographs of subjects abroad, which the Committee were unable to accept owing to their operations being confined to the British islands. At the desire of Professor W. Boyd-Dawkins, F.R.S., the information is now given, as it may be of interest to many members of the Association.

It has been suggested that, in order to save trouble in printing for the purpose of supplying copies to applicants, donors of photographs should make arrangements with local photographers, to whom their negatives may be entrusted, to execute orders for prints or lantern slides. This information is added in one case in the present report, and will be continued in future lists whenever a similar arrangement has been effected.

Your Committee have kept in view the question of the disposal of the photographs and the proposed publication of a selection of approved subjects, but recommendations on both these points are still deferred until it is seen to what extent the collection is likely to reach. They respectfully request reappointment with the object of further proceeding with the work, in order that the collection may not be too partial or incomplete, but may represent as nearly as possible all important geological formations exhibited in the British Islands. Their special efforts, during next year will, it is proposed, be directed to obtaining photographs from the numerous localities not already included in the published lists. In this attempt, valuable assistance may be rendered by officers of the Geological Survey and local geologists by sending to the Secretary of the Committee early intimation of the opening of new sections showing features worthy of record by photography, in addition to particulars of old sections of typical importance, and localities of geological interest which have hitherto escaped record, or of which sketches and diagrams only have been published. It is hoped, too, that delegates of the Corresponding Societies and the officers of local Field Clubs or other bodies will bring the scheme before their members, and thus materially aid in making known the objects of the Committee.

Certain instructions have been drawn up, in order to secure uniformity of action, copies of which will be supplied on application to any member of the Committee. It is understood, however, that these are to be considered merely as a guide, and that all suitable photographs illustrating natural features of geological interest will be accepted for registration even if not complying with the whole of the recommendations stated in the circular, a copy of which is appended:—

Instructions for the Collection of Geological Photographs.

Photographs are desired illustrative of characteristic rock exposures, especially those of a typical character or temporary nature; important boulders; localities affected by denudation, or where marked physiographical changes are in operation; raised beaches; old sea-cliffs and other conspicuous instances of marine erosion; characteristic river-valleys or escarpments, and the like; glacial phenomena, such as *roches moutonnees*, moraines, drums and kames, or any natural views of geological interest. Photographs of microscopical sections and typical hand-specimens of rocks are also admissible.

I. The views should be taken under skilled geological direction, and the most typical views should be secured in preference to general views. Societies are urged to form committees for the purpose of noting sections suitable to be photographed, and arranging such work as may be possible in each district. To this end it is anticipated that the services of many amateur photographers may be usefully brought into requisition.

II. Size of photograph *recommended:* 8½ by 6½ inches ("whole-plate"); but this is *optional.* In view of the difficulty of carrying a heavy camera and plates, it is not desired to exclude smaller views when these are well-defined and clear. In the case of small negatives, when sharp, an enlargement to whole-plate size is desirable for the purpose of a place in the collection. The views should be printed by a permanent process whenever practicable. Isochromatic plates are strongly recommended to be used.

III. In order to preserve its scientific value, each photograph should be accompanied by as many of the following details as can be conveniently given. Forms for this purpose will be supplied on application.

(*a*) Name and position of section or locality.
(*b*) Special features shown, with illustrative diagrams, when necessary. (Further details may be given, if more convenient, on a separate tracing attached to the photograph.)
(*c*) Height and length of section, and compass direction.
(*d*) Name and address of photographer, or of the society under whose direction the view is taken.
(*e*) Date when photographed.
(*f*) Indication (where necessary) of direction of light and shade; *i.e.*, state whether taken in "direct light" or "in shade."

IV. Each photograph sent in for registration should bear a *local* number, and the accompanying form should be numbered in accordance therewith.

V. Photographs should be sent *unmounted.* Mounts of uniform size, with perforated edges for binding, to hold one whole-plate, two half-plate, or four quarter-plate views, have been prepared, and a number will be forwarded, on application, to donors of photographs who prefer to mount their own prints.

VI. Lists of photographs, copies of photographic prints and information relative thereto should be sent under cover to the Secretary to the Committee, *at the earliest possible date*, in order to facilitate the work of registration.

Societies' Meetings.

Aberdeenshire.—The monthly meeting was held on the 30th ult., and was largely attended. It was arranged, consequent on a report by the Executive Committee, to hold a lantern slide competition, in connection with which two prizes would be offered for time-exposure work and one prize for instantaneous subjects, the awards to be made by a professional photographer. The prize slide will remain the property of the society, and all slides sent in will be at the service of the committee for public exhibition if required. It was also agreed that a competition in prints should be held, and it was remitted to the committee to arrange the conditions. At a later stage Dr. Mackenzie Davidson, the honorary president of the association, called attention to the forthcoming exhibition of the Home Industries Association to be opened in Aberdeen by Princess Louise, who, it is expected, will be accompanied by Princess Beatrice. He stated that he had succeeded in inducing the promoters to include in the exhibition a photographic department to represent the counties of Aberdeen, Banff, Forfar, and Kincardine, and he expressed the hope that his action in the matter would be heartily seconded by the society. He suggested that the photographic display could best be promoted through the medium of the society, and that every means should be taken to secure contributions from amateurs in the counties embraced in the exhibition. The exhibits would be the means both of bringing the society into further public notice and of securing fresh accessions to the membership. It was agreed to give the scheme the most cordial support, and a Special Committee consisting of the President (Mr. Todd Moffat), the Secretary (Mr. G. Brodie), Professor Findlay, Messrs. Barnett, Brown, Borthwiek, and W. P. Robertson, was appointed to arrange details, in consultation with Dr. Mackenzie Davidson, and report to next meeting. The question of holding a special excursion on the autumn holiday was discussed, and it was agreed that those intending to take part in the excursion should consult together on the subject, and select a rendezvous.

Great Yarmouth Camera Club.—The members went on the 26th ult. to the Priory, Ranworth, Norfolk, at the invitation of the owner, G. Danby Palmer Kerrison, Esq. The party left Yarmouth at 9, and drove through Caister and Ormsby, a most charming part of this neighbourhood, then through Acle, which, being a flat country, does not afford such opportunities for snap-shots. Arriving at South Walsham, the party stopped to take views of the churches.

The most unusual sight of two churches, quite separate, standing in the one churchyard, and within a few yards of each other, affords an interesting subject, if not altogether a good picture. Several shots were also made in this pretty village. Resuming the journey, the party arrived at the Priory at 11.30, after a drive of about fourteen miles. The members soon got to work, and cameras were to be seen in all directions, as the charming grounds well wooded and with small rivulets running in various directions afforded ample opportunity for some pretty landscapes. At 1.30 the whole party were entertained at luncheon by Mr. Kerrison, after which a visit was made to Ranworth Hall, the residence of the Misses Kerrison. A walk through the beautiful avenue of trees brought the party to the Old Hall, which dates back to the 16th century, and connected with which there are many interesting legends, one of which is that the ghost of an ancestor of the family can be seen sometimes riding with a pack of hounds across the fields into Ranworth Broad, where they disappear. The church contains some very rich old carvings, the screens are gorgeous with figures of angels, producing a striking and brilliant effect. The day was very fine and the light good, so that the workers had everything in their favour, and some good pictures should be forthcoming from this outing, one of the most successful and enjoyable that this society has had during the season.

Hackney.—A meeting was held on the 30th ult., Mr. R. Beckett presiding. Minutes read and confirmed. Questions: Does the carbonate of soda reduce the printing-out paper in fixing, more than sulpho-cyanide? Reply: Slightly. How long will the sulphate of iron keep? Reply: Almost indefinitely if the bottle be full and well stoppered and acidified with sulphuric acid. When the solution is clear and green it is *ferrous*, and aids the image-making, but when brown, it is hydrated oxide of iron, or *ferric*, and destroys the image. Discussion on the best mountant for the printing-out paper when polished was then continued. Mr. Reynolds advised gelatine, *quite* boil it, then allow to get nearly cold, though liquid, and use. If it be applied hot it will skin over. Mr. Harverson uses Aristotype Paste with good result. It was suggested that thin cartridge was as effective in keeping on the gloss as the ordinary waterproof backing. Mr. Hudson showed a magazine containing twenty-four plates—one shutter. Place in changing-bag, take out plate from one side, and put away in other. Members' work shown from Messrs. Dean, Gosling, Parfitt, Pollard, and Sodeau. A daguerreotype was shown, method of producing it explained by the Chairman. Mr. Sodeau then gave a paper on "Dark-room Illumination," explaining the theory of light and dispersion, showed the use of the spectroscope. In its absence, an efficient test is by using a piece of blue glass. If white light seen through these combined is affected by other tints, it shows the colour to be more or less faulty. Exposures of half, one, two, and five minutes were uniformly made under the same conditions, viz., light about one candle-power at one foot. Developer same. (*a*) Argand gas lamp, red chimney. Result: transmits red, orange, little yellow. Plate, (1) Paget's 50, one minute; image just visible. (2) Edwards's Iso. medium, half minute, visible. More fog with Iso at half minute than Paget's 50 at five minutes. (*b*) Red glass transmits red, orange, and just a trace of yellow. (1) Paget's 50, five minutes, no effect. (2) Edwards's Iso. medium, one minute, just visible; same as red chimney on Paget's. Altered burner to a Bray's; Paget's just showed at one minute. (*c*) Aurine (30 gr. to 1 oz. collodion, original burner, transmits red, orange, and fair amount of yellow. Paget's 50 just visible in half a minute; more fog than red chimney, but is counterbalanced by being more comfortable to work with, and can see with much less light than red.

Putney.—By the courtesy of the Director, members of this society visited the Royal Gardens at Kew on 3rd inst. Most of the members arrived at the gardens about 10.30, and proceeded to photograph in the various houses, which are only open for the purpose until 12 o'clock, when the general public are admitted. After 12 the time was spent in photographing out of doors, and as these beautiful gardens abound with objects of scientific and artistic interest, time went only too rapidly. The weather was favourable for photography, being generally fine with a good diffused light, giving plenty of time for the shadows, without destroying the high lights. While busy in the houses the weather was dull, with occasional showers of rain. This, in conjunction with the use of Isochromatic plates, no doubt accounts for the entire absence of halation from the negatives. In the houses a wide-angle lens, say of focal length less than or equal to length of plate, will be found very useful. The houses lend themselves particularly to effective stereoscopic photography, of which advantage was duly taken by one of the members. As a hint to intending visitors it may be mentioned that working with *f*/20 and Edwards' instantaneous Isochromatic plates an exposure of 20 seconds was found to be about correct in the houses, the resulting negatives being full of detail in lights and shadows, and with fine gradation. Round the lower lake plenty of good views may be found, including snap-shots at the water fowl of various kinds. These are readily brought into position by the judicious distribution of crumbs of bread; the wise photographer will provide himself accordingly. Altogether a most pleasant and successful day was spent by the members present, regret being expressed that owing to holidays the attendance was not so large as the occasion merited.

South Manchester.—Ordinary meeting held on 29th ult., Mr. J. Wilkinson in the chair. After the election of auditors, several of the members, in response to the request on the circular showed exhibits of holiday work consisting of negatives, prints, etc. Mr. Reid showed several lantern-slides taken from negatives exposed with Miller's hand-camera. The Chairman brought two "Sandell" plates, one exposed for two seconds, the other for twenty seconds with *f*/16, and developed with pyro, bromide, and ammonia. In the discussion that followed, it was the opinion of the meeting that the longer exposed one was the best, although very slight difference could be perceived between the two.

Warrington.—The monthly meeting of this society was held on 30th ult., a very large number of members being present. In the absence of the President (Mr. T. J. Down), Mr. H. N. Houghton presided. Mr. C. Aylward, master of the Warrington School of Art, read a paper on "Composition," commencing by explaining the difficulties the amateur photographer had to contend with, well knowing how difficult it is to have full control of the composition. He went on to treat the subject from an artistic point of view, and explained the technicalities of an artist's education in taste, and briefly described the science of proportion, perspective, aerial perspective, also of light and shade. To master these laws he advocated greater attention, and reminded the amateur of his greatest fault, that of exposing a plate upon anything so long as he might be able to take something home to develop. He asked them to look further, and if they were not satisfied with the arrangement upon the ground-glass, or if it did not lead to something pleasing, not to take it, but endeavour to obtain those beautiful transient effects which nature is clothed with, perhaps only for a few seconds at a time. The lecture was illustrated by numerous sketches and a collection of photographs of Turner's works. A discussion followed. Mr. H. G. Johnstone was elected a member of the society.

SOCIETIES' FIXTURES.

Sept. 9.—RICHMOND.—Discussion, "Improving Faulty Negatives."
" 9.—CROYDON (Microscopical).—General meeting.
" 10.—WEST SURREY.—Outing to Wimbledon.
" 10.—RICHMOND.—Excursion to Windsor.
" 10.—ELIZABETHAN.—Outing.
" 10.—CROYDON.—Photographic ramble.
" 10.—HACKNEY.—"A Trip to Giant's Causeway."
" 10.—OXFORD.—Outing.
" 10.—SOUTH LONDON.—Excursion to St. Mary Cray for Chislehurst.
" 10.—HACKNEY.—Excursion to Sewardstone.
" 10.—LEYTONSTONE.—Informal meeting.
" 13.—FAIRFIELD.—Enlargements.
" 13.—HACKNEY.—Discussion *re* coming exhibition.
" 13.—EAST LONDON.—Ordinary meeting.
" 14.—LIVERPOOL.—"Paget Prize Plates. Results of Exposures," Mr. Stuart.
" 15.—NORTHAMPTONSHIRE.—Excursion to Horton and Cowper's Oak.
" 15.—NEWCASTLE-ON-TYNE.—Outdoor meeting to Gilsland, Lanercost, and Naworth.
" 15.—LIVERPOOL.—Excursion to Hoylake.
" 16.—LEWISHAM.—"A Trip to Norway with the Hand-Camera," Mr. W. C. Chaffey, sen.
" 16.—RICHMOND.—Informal meeting.
" 17.—PEOPLE'S PALACE.—Outing to Tower of London.
" 17.—LEYTONSTONE.—Informal meeting.
" 17.—EAST LONDON.—Excursion to Winchmore Hill.

The Hendon (Sunderland) Industrial and Art Exhibition was opened on 30th ult. The entries in the amateur photography section were not large, but the sets for which the prizes were awarded were excellent works of art. Photographic views of landscapes and seascapes have been kindly lent by the following:—Messrs. C. E. Cowper (Hon. Secretary of the Sunderland Photographic Association), G. T. Brown, H. Brown, John Lynn, A. Peddie, T. Dent, T. Clark, F. S. Henderson, W. Milburn, W. Broomfield, Dr. Leggatt, and the Rev. J. Bentley. There were also some complete sets of photographs which had been lent by the Editor of the AMATEUR PHOTOGRAPHER. The judges' awards were:—Class 103—Best set of three landscapes or seascapes: 1, Mr. G. T. Brown; 2, Mr. J. Lynn. Class 104—Best set of three instantaneous photographs: Rev. J. Bentley. Class 105—Set of six lantern slides: Dr. Legat.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5807. **Instantaneous Plates.**—Will any reader tell me if there is any firm that would supply me with extra rapid plates suitable for taking horses broadside on at full speed, etc.? Platee as fast as Eastman'e films and Mawson and Swan's "Mawson" plate are too slow. Also, if such plates are obtainable, will they keep in India? For various reasons shall be unable to coat my own plates.—REX.

5808. **Developing Tent.**—Could any reader recommend me a cheap developing tent, or some other simple contrivance for developing plates for positives, as I wish to travel from one village to another, and at times by train? What I want to avoid is the dark-room on wheels, so as I could carry the required apparatus by hand.—WET PLATE.

5809. **Positive Appearance.**—Can any one tell me the cause of all my negatives showing the positive when looked at from the glass side, but when seen from the film side showing the ordinary negative process? I use the Ilford formula for hydroquinone and eikonogen; and for fixing, 4 oz. hypo to 10 oz water. I think it must affect the printing qualitiee of negative, as prints have a muddy appearance.—POSITIVE.

5810. **Copying.**—Can any one inform me of the best way of making a negative from old c. de v. print to cabinet size?—ONE IN A FIX.

5811. **Elizabeth's Oak.**—Will someone kindly tell me the name and address of a dealer who could supply me with a photograph of Queen Elizabeth's Oak in Hatfield Park?—H. I. C.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

July 15th.—No. 5756.
,, 22nd.—Nos. 5763, 5768.
,, 29th.—Nos. 5777, 5778.
Aug. 5th.—Nos. 5779, 5780, 5781, 5785, 5786.
,, 19th.—Nos. 5790, 5791.
,, 26th.—Nos. 5794, 5796, 5797, 5798, 5799.
Sept. 2nd.—Nos. 5800, 5801, 5802, 5803, 5804, 5805, 5806.

ANSWERS.

5795. **Copying.**—Why did you put tissue paper over the print? It is not surprising that it was a failure. Try again without the tissue paper, incline the print so as to get no light reflected from its surface, give ratber a short exposure, and develop slowly, so as to get ae mu cb contrast and also as much detail as poseible.—R. A. R. BENNETT.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

E. W. MALE.—The pink tone may be caused by lack of gold or by toning in too strong a light. You give no information as to method of working.

A. K. TRAYLER.—Letter by post.

HERBERT A. SALWAY.—The developer which has succeeded best in our hands is Chapman's.

A.

Hydrokinone	40 gr.
Eikonogen	120 ,,
Sodium eulphite..	480 ,,
Citric acid	20 ,,
Distilled water to	20 oz.

B.

Potassium bromide	5 gr.
Sodium carbonate (crystal)	60 ,,
,, hydrate	30 ,,
Distilled water to	20 oz.

For use mix in equal parts.

H. F.—(1) Not necessarily absolute sunshine, but a good ligbt. (2) Mawson, Barnet, and extra rapid Edwarde's ieochromatic, Imperial, Paget, and any one you choose. (3) The acid fixing bath cannot be used for prints. (4) The pink tinge is not prejudicial to the toning bath.

WATCH.—Your nearest club, we ebould say, would be the Tooting Camera Club, Hon. Sec., G. H. Dollery, "Glion," Lucien Road, Tooting. There is a Lewisbam, Sydenham, S. London, Loughborough, Brixton, and Clapham, all not far off. (2) The negatives given by the camera named are eo small as to be useless. As an example of ivy the print is by no means bad, but your camera was not straight, and it is rather over-printed.

D. J. GADSBY.—You do not state whether you allowed the bath to etand before using, or whether the prints were wasbed first or not. We should say that the yellow tinge is due to sulphur toning. Either let your bath stand at least sixty-four hours before adding the gold, or else heat gently for half an hour, then filter and add the gold, and well wasb your prints first.

G. T. R.—There is no easy way of obtaining a good print from the fogged negative; it might be possible with a good deal of care to so conetruct a vignetter as to allow the fogged part to print more than the edges.

ONE IN A FIX.—Any whole-plate by Taylor, Croucb, Wray, Beck, or "Optimus" would suit your purpose.

DUDLEY.—You want one of the special cameras made for stamp portraiture. Write to Fallowfield, 146, Charing Cross Road, and ask for quotations.

J. P. and W. W.—(1) Bartolozzi tones are extremely difficult to obtain on gelatino-cbloride paper. The best method ie to tone very slightly with acetate and gold bath, and then fix. Practically you cannot obtain these red tones, though you can get near them. (2) For bromide prints bleach the fixed and well-wasbed prints in

A

Sulphate of copper	1 part
Distilled water..	100 parts

B.

Potassium bromide	1 part
Distilled water	100 parts

Mix these two solutions; when the print ie thoroughly bleached, wasb well, and develop after having exposed to daylight for some ten minutes, or develop in daylight with tbe following developer:—

A.

Sodium sulpbite	20 parts
Eikonogen	4 ,,
Water	300 ,,

B.

Carbonate of potasb..	50 parts
Distilled water	300 ,,

For use mix

Solution A	5 parts
Solution B	2 parts
Water	200 ,,

When the desired tone is reached immerse in

Sodium sulphite	4 oz.
Tartaric acid	20 gr.
Water	16 oz.

or else bleach the well-washed prints in

Nitrate of lead	4 parts
Ferridcyanide of potasb	6 ,,
Distilled water	100 ,,

then wash well and treat wi.h

Neutral chromate of potash ..	1 part
Distilled water	10 parts

then wash and immerse in

Cupric cbloride	1 part
Distilled water	10 parts

then wash well and dry. (3) If instead of using French chalk you use

Yellow wax	12 gr.
Yellow resin	24 ,,
Benzine or ether	2 oz.

and rub tbe glass with this, you will have no difficulty in stripping the chloride printe. (4) The lead bath will not give permanent prints. Avoid this. Referring back to Bartolozzi prints, you will find that Alpha paper and carbon printing are the best for tbeee tones. In the latter a special Bartolozzi tissue is sold, which gives very fine results. The carbon process is neither expensive nor difficult; wby not try it?

AN AMATEUR.—For copying oil paintings and coloured objects generally you must use leochromatic or colour-sensitive plates. There are two brands made in England, one by Edwards and Co, The Grove, Hackney, and the other by the Ilford Co. Use *medium* isochromatic, and if there is any quantity of blue in the picture, you must use a yellow screen, placed before, between, or behind the lenees; in fact, all pictures should be copied through a yellow screen. The exposure will depend so much upon tbe tone and character of the picture and pigments that we cannot give you mucb help—but if a very dark picture it may require about three or four hours' exposure with a yellow screen and a small stop. Very recently painted, bright pictures, on tbe other hand, will require probably about half an hour under the same conditions. Our leaders on colour will shortly become "colour and photography," and give you a good idea on the subject. Pyro and ammonia is the best developer. Write again if you like.

R. A. MICHIE.—See "Our Views" on Noah's Ark.

DOZEY G.—Date not yet fixed for criticieing prints. Two onnees of hypo would be sufficient to fix a sheet of paper.

H. J. C.—Probably your negatives want reducing; if so, the acid fixing acts too elowly. Try Howard Farmer's bypo and ferridcyanide. (2) If carefully applied, the negative preserver is as effectual as any other varnish.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** (*A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.*)

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* **2½** *per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

ADVERTISEMENTS *can be inserted under a number the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.**, *or a commission of* **2½ per cent.**, *upon the sale price of the apparatus.*

Bicycles, Tricycles, etc.—Exchange Safety bicycle, ball bearings complete with lamp, bell, brake, etc., in excellent condition. Wanted, hand-camera, good make, or offers?—P. G. H., 23, Bonfield Road, Lewisham.

Cameras, etc.—Half plate camera (Fallowfield), all movements, Eastman rollholder, and three slides, 5 guineas; approval; deposit.—Broomhall, St. Margaret's, Twickenham.

Cameras, Lenses, etc.—London-made high-class half-plate double extension camera, best leather bellows, reversing back, every necessary movement, one double slide, 47s. 6d.; very finest half-plate extra-rapid rectilinear lens, exquisite definition, Waterhouse diaphragms, 22s. 6d.; great bargains; approval.—Cyclist, 8, Kenilworth Road, Willesden Lane, London, N.W.

New whole-plate long-extension mahogany leather bellows camera, Underwood's, folding tail-board, reversing back, one slide, lock up case, wide-angle and extra-long focus lenses, by Laverne and Taylor, cost over 10 guineas, cash 6 guineas.—A Carre, 39, Hauteville, Guernsey.

Griffith's hand-camera with finder, good condition, 16s.; half-plate camera and lens, 26s.; quarter Instantograph shutter, 3s. 6d.—Nutt, 242, Fitzwilliam Street, Sheffield.

For sale, high-class half-plate photographic apparatus, camera by Watson, lens by Dallmeyer and Ross, Thornton-Pickard and Newman shutters. For particulars and price apply, H. Lewis, 35, Broad Street, Reading.

Exposure Meter.—Watkins' exposure meter, nearly new, 9s.—Cooper, The Lodge, New Road, Bocking, Essex.

Hand-Cameras, etc.—5 by 4 Kodak, equal to new, 30 films, fitted to hold 100, a bargain, £6 5s.—264, Hainton Street.

Kodak No. 1. perfect, containing film, also two unopened packets film, 100 each, 45s.; Kodak No. 4 Regular, perfect, containing film, 7 guineas.—Pierrepont, Thames Ditton, Surrey.

Hand-camera, B daylight Kodak, has double lens, revolving stops, view finder, shutter for time or instantaneons exposures, and patent locking and registering device, to carry spool of films for 24 exposures, covered in black leather, new last July, take 55s.—O. Banks, 19, Maurice Street, Nelson, Lancs.

Hand-camera (Houghton's Antomatic), carries 12 quarter-plates, Thornton-Pickard shutter, automatic changer, rapid rectilinear lens, compact instrument, 9½ by 5½ by 4½, has done good work, price £4 10s.—

J. B. Hartness, Lauriston House, Ceylon Place, Eastbourne.

No. 1 Kodak with about 25 to 30 films, as new, cost £5 5s., take £2 10s.—Simpkins, Ivy House, Basingstoke.

Lenses, etc.—7 by 5 Optimus Euryscope, cost £4 7 4s. 6d., sell £3 3s.; 8½ by 6½ Burr's rapid rectilinear, cost £3 10s., sell £2 5s; Waterhouse stops, condition as new.—Adams and Son, 57, Haymarket, S.W.

Half-plate R.R. lens, cost 75s., price 35s.; Optimus whole-plate tripod, 10s. 6d., good condition.—B. B., Colville Library, Talbot Road, London, W.

Hockin's half-plate Desideratum rectilinear wide-angle lens, new and perfect, lowest 25s.; trial allowed on receipt of cash.—Griffin, Chemist, Chingford, Essex.

Ross' landscape lens, 12 by 10, 2 guineas.—Murrie, 16, Lee Crescent, Portobello.

For sale, Lancaster's quarter-plate combination rectigraph lens, price £1.—Heath, West View, Kendal.

Sets.—Underwood's 1892 half-plate Instanto set, good as new, only 63s.—Ricketts, Cheltenham House, Stroud.

Quarter-plate set, complete, all accessories, cost recently £3, sacrifice 27s. 6d.—85, Dalberg Road, Brixton.

Whole-plate long-extension Rayment's patent camera, good as new, reversing frame, and all motions, three double dark slides, twill, lined focussing cloth, all in strong waterproof canvas case, three-fold tripod, 5 guineas, cost £10; whole-plate wide-angle rectilinear lens, with rotating diaphragm, Black Band series, £3; Optimus book detective camera, fitted Optimus lens, three double dark slides, complete in leather case, lined velvet, with lock, never used, 3 guineas, cost 6; good whole-plate changing bag 4s.; Decoudun's photometer, 5s.; Hurter and Driffield's actinometer, brand new, 6s.—Miss Hardman, Elmshade, Reigate.

Full-plate Lancaster camera (Merveilleux), with stand, three double dark slides (two with carriers), new instantaneous shutter, four printing frames, three developing dishes, one dozen Ilford full plates, waterproof cases for camera and stand, original cost over £8, will take £4 5s.; camera, etc., may be seen at office of this paper.—No. 330, office of this paper, 1, Creed Lane, E.C.

Will exchange my half-plate Lancaster's Le Merveilleux camera, double back, handsome tripod, and rapid rectilinear lens, for good quarter-plate camera with extra backs, tripod, and rapid rectilinear lens by good maker.—No. 331, office of this paper, 1, Creed Lane, E.C.

Half Instantograph, six slides, Newton lens, Thornton shutter, £4.—E. Ellis, High Street, Wavertree, Liverpool.

Quarter Underwood's 1890 Instanto, every movement, six double backs, R.R. lens, bag, tripod, shutter, £2 2s.—Bartlett, 3, Ainslie's Belvedere, Bath.

Underwood's Instanto half-plate camera, Ashford stand, five double slides, R.R. and W.A. lens, and complete apparatus for turning out photographs, £8; worth double.—Davies, 22, Market Square, Pontypridd.

Underwood's half-plate President (1892) camera, two slides, Taylor and Hobson's rapid rectilinear, iris diaphragms, Thornton shutter, Ashford tripod, £7.—66, Middle Street, Yeovil.

Sundries.—Nearly new, £4 gent.'s small silver English lever hunting watch offered in exchange for a half-plate camera, tripod, and two or three double backs; approval; deposit.—No. 332, office of this paper, 1, Creed Lane, E.C.

Whole-plate Lancaster's Multum-in-Parvo enlarging camera, quarter-plate double dark slide for International camera, quarter Hiero washer, quarter Eclipse changing bag, stiff American cloth case to hold quarter set. What offers?—Apply, Thirkell, 313, Southwark Park Road, S.E.

WANTED.

Cameras, etc.—Wanted, good half-plate camera or outfit, Chadwick's preferred, maker's name, full particulars, lowest cash price.—Wyndcliffe, Ilkley.

At once, cheap half-plate camera, slide, and stand, no lens, good maker.—Brown, Toll Buildings, Coatdyke, Coatbridge.

Hand-camera, etc.—Omnigraph wanted. Particulars and price to Crosbie, 21, Gloucester Crescent, Hyde Park.

Lenses, etc. — Wanted, whole-plate Lancaster's Instantograph lens and shutter.—Jackson, 71, Oxford Street, Manchester.

Kollholder.—Eastman's 6½ by 4½, second-hand.—16, Gladstone Place, Edinburgh.

Sundries. — Wanted, AMATEUR PHOTOGRAPHER posted regularly weekly. State lowest price to Copeman, Henstridge.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

Bargains in Hand Cameras.— Fallowfield's Facile, fitted rapid rectilinear lens, carries twelve quarter-plates, as new, £3 17s. 6d. Optimus magazine hand-camera, covered leather, carries 12 quarter-plates, finest Optimus rapid rectilinear lens, two finders, shutter, etc., as new, take £5 5s.; Talmer hand-camera, carries 12 plates, fine lens, two large finders, time and instantaneous shutters, as new, take 65s.; Swinden and Earp hand-cameras, carries 20 quarter-plates, fitted Taylor and Hobson's best rapid rectilinear lens, roller-blind shutters and case, as new, £6 15s.; Steinheil hand-camera, 9 by 12 centimetres, rapid rectilinear lens, two finders, shutters, carries twelve plates, bag changing, as new, take £4 10s., cost £10 10s.; Lancaster's Omnigraph, covered leather, good lens and shutter, take 15s.; Samuel's quarter-plate hand-camera for twelve plates, quite new, rapid rectilinear lens, two finders, take 27s. 6d.; Griffiths' best quality hand-camera, carries six ¼-plates, two sunk finders, good lens, pneumatic shutter, take 30s., cost 42s.; quite new, all above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second hand apparatus bought, sold, or taken in exchange. Inspection invited.

Cameras! Cameras! Cameras! Lenses! Lenses! Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus of every description bought, sold, or taken in exchange. Inspection invited.

Bargains in Lenses.—15 by 12 rapid rectigraph lens, Silver Ring, iris stops, grand definition, take £5 17s. 6d., quite new; whole-plate portrait lens, rack focussing, Waterhouse stops, works *f*/6, £2 17s. 6d.; whole-plate Voightlander's rapid rectilinear, fine definition, best order, 30s.; whole-plate Optimus rapid landscape lens, quite new, rotating stops, 35s.; whole-plate Lancaster wide-angle lens, rotating stops, 15s.; 8½ by 6½ Ross rapid symmetrical, Waterhouse stops, grand definition, as new, £4 10s.; Wray's 7½ by 5 wide-angle rectilinear, rotating stops, as new, 47s. 6d.; half-plate aluminium rapid rectilinear, by Parkes, Waterhouse stops, 30s.; half-plate Ross' portable symmetrical, rotating stops, 4 in. focus, finest order, 45s.; half-plate wide-angle, by Morley and Cooper, rotating stops, as new, 27s. 6d.; half-plate Ross' rapid symmetrical lens, as new, moveable hood, Waterhouse stops, take £3 17s. 6d.; Wray's landscape, Casket lenses, 5 in., 7½ in., and 10 in. focus, iris stops, quite new, take 70s.; Ross' c. d. v. portrait lens, rack and pinion, finest condition, 35s.; Shew's c. d. v. portrait lens, Waterhouse stops, rack and pinion, as new, take 21s.; Optimus 5 by 4 rapid Euryscope lens, by Perken, Son, and Rayment, Waterhouse stops, as new, 47s. 6d.; quarter-plate Optimus rapid rectilinear, by Perken, Son, and Rayment, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.— On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Bargains in Cameras and Sets.—12 by 10 camera, double extension leather bellows, wide-angle movement, double dark slide, fitted fine rapid rectilinear lens and sliding stand, a grand lot, £9 17s. 6d.; Optimus whole-plate camera, leather bellows, reversing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterhouse stops, Thornton-Pickard shutter, three double dark slides, three-fold stand and case, £11 5s.; whole plate Underwood instanto, wide-angle movement, leather bellows, double extension, rapid rectilinear lens, iris stops, fine definition, double slide, half-plate carrier and folding stand, as new, take £5 15s.; whole-plate camera by Hare, grand article, leather bellows, double extension, wide-angle movement, double slide, changing box, for 24 plates, also changing slide, Optimus rapid rectilinear lens, Waterhouse stops, brand new three-fold stand and case, take £10 17s. 6d.; 7½ by 5 long-focus camera, by Gotz, wide-angle movement, leather bellows, reversing back, rapid rectilinear lens, and folding stand, set complete, £5 15s.; half plate Underwood's Instanto, wide-angle movement, double extension, fitted rapid rectilinear lens, slide, and folding stand, £3 17s. 6d.; half-plate camera, by Houghton, all latest movements, grand article, fitted three double slides, rapid rectilinear lens, and double folding stand, £6 10s.; half-plate 1892 Instantograph camera, all latest improvements, Instantograph lens, iris stops, shutter, double slide, folding stand and case, take 72s. 6d., as new; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, three-fold stand and case, take £6 10s.; quarter-plate Lancaster's Merveilleux set complete, 15s.; Lancaster's Convention set complete, camera, lens, shutter, slide, and stand, as new, 40s.; quarter-plate aluminium Instantograph set complete, quite new, camera, lens, slide, shutter, and stand, 50s.; quarter-plate Instantograph camera, lens, shutter, slides, and folding stand, 32s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

MISS F. E. CROSS, Artist and Retoucher. Negative Retouched free, as specimen. Price list on application.—2, Raul Road, Hanover Park, S.E.

ANY kind of high-class Glass Writing and Gilding done in exchange for photographic apparatus of good quality.—No. 329, office of this paper, 1, Creed Lane, E.C.

RICHARDS' Patent Corners, for mounting photos, prints, scraps, etc., in albums, scrap books, and mounts; clean, convenient, ornamental, self-contained and always handy. Ready gummed, price 1s. the box or by post 1s. 1½d.—F. Watson, 17, Dartmouth Street, Westminster, S.W.

NEW!!

EDWARDS'S PROTECTIVE VARNISH

FOR FILM NEGATIVES.

INSTRUCTIONS.—Pour the Varnish into a flat dish, soak the Film Negatives in it for two or three minutes, and hang them up to dry.

PREVENTS CURLING AND AFFORDS PERFECT PROTECTION.

Equally Useful for Negatives on Glass.

Eight-ounce Bottles, **1s.** Pints, **2s.** Post, 3d. and 6d. extra. Of all Dealers, or

B. J. EDWARDS & CO., HACKNEY, LONDON.

The Amateur Photographer

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 4, Creed Lane, Ludgate Hill, London, E.C.

No. 415. Vol. XVI.] FRIDAY, SEPTEMBER 16, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc, from 10 till 1 o'clock.

Our Views.—A.P. Lantern Slides—"Chit Chat"—Elliott and Son's New Leaflet—Our Illustrated Supplement—Photographs in Railway Carriages—The British Public and Science—Vogel and Ulrich—Colour Printing—Leytonstone Camera Club Exhibition—Mr. A. Horsley Hinton on Art—Cheap Lenses—Mr. Krone on Lippmann's Work—A Photographic Toy—Photographic Spies in Canada—An Explosion—Patenting all over the World—The Hove Camera Club Exhibition.

Chit Chat.—By "Chatterbox."

Letters.—Hydroquinone Development (Surgeon)—Society for Forest Gate (Bailey)—Eastman and Ilford P.O.P. (Pickering)—A New Album Wanted (P. G. Bull).

Articles.—General and Photographic Chemistry (Conrad)—How to Make a Set of Photographic Apparatus (H. J.)—Some Notes on Enamelling Gelatino-Chloride Prints (Craig)—Submarine Mines—The Office and the Future of our Photographic Exhibitions (Hinton).

Illustrated Supplement.

Reviews.—Fotografisk Tidskrifts Arsbok (Roosval)—Practical Guide to Photographic and Photo Mechanical Printing Processes (Burton).

Catalogues.—York and Son—G. W. Wilson and Co.

Societies' Meetings.—Ashton—Burslem—Crewe—Croydon—Derby—Devonport—E. London—Hackney—Lewes—London and Provincial—N. London—N. Middlesex—Richmond—Rotherham—Sheffield—S. London—Wigan—Woolwich Polytechnic.

Editorial Department—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

Terms of Subscription—

United Kingdom.....	Six Months, 5s. 6d.....	Twelve Months,	10s. 10d.
Postal Union	" " 6s. 6d	" "	13s. 0d.
Out of Postal Union ..	" " 7s. 9d.....	" "	15s. 3d.

Trade Advertisements *are received up to Tuesday morning.*

Publishing Department.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 40.—"Portraiture and Figure Study." Latest day, Sept. 19th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, October 14th.)

The Amateur Photographer Annual Lantern Slide Competition closes on the 30th inst. We warn our readers not to be late, as the judging will take place as soon after the 30th inst. as possible. The slides will be shown at the P.S.G.B. Exhibition on Saturday, October 8th.

We commence this week a column of "Chit Chat," by a well-known "Chatterbox," who, however, declines to sign his name in full. Anonymous writers too often make use of their position to run amuck against one and all, and not always in a kindly spirit. Our "Chatterbox," however, is very good-tempered, and though he may have a quiet dig at some of our contributors, as he has sometimes privately done to the Editor, we think we may say from personal experience that he never draws ill blood. Besides, he has always the fear of the editorial blue pencil with its deleting powers.

Our contemporary, the *Chemist and Druggist*, in reviewing the "Amateur Photographer's Annual" this year, remarked, "Amateur photographers are surely the pet children of journalism."

Well, Jonathan Fallowfield and the Britannia Works add their quota to the spoiling of the photographer by issuing gratis monthly leaflets; and now Elliott and Son, the makers of the well-known "Barnet" plate, are issuing a four-page paper called *The Photographer* (by the bye, we thought this title was already in existence), which is for gratis distribution through dealers to amateurs. One good feature about this last comer is that "puff" is to be absent, and if, as promised, illustrations are included, the demand will be great. Next month there is to be a carbon print.

There is an old saying that things which are obtained for nothing are never valued. There may be some truth in this, but our Monthly Illustrated Supplement, we think, pleases many, and is valued by them. This week, we think, we have broken the record, as we have no less than eleven illustrations. We hope our readers will appreciate our efforts to keep well to the front.

Photography has been for some time used by several of the great railways as a means of ornamenting the interiors of their carriages, and we believe the G.W.R. were the first thus to call in the aid of our art. An extension of the idea may now be seen at Paddington, where a large

screen has been erected, close to the entrance to the subway, containing a large number of platinotypes, some of very fine quality, of the principal places to be reached by this line. When we were there last week, there was quite a small crowd looking at them.

A FEW minutes mixing with the crowd allowed us to overhear some curious remarks. One gentleman suggested they were engravings; another, evidently in the know, said; "Oh! no, they're platinotypes," when back came the answer, "What, tintypes! I didn't know they did them so well as that now." We did not hear the explanation that probably followed, as we caught the parthian shot of a cynical critic, "Ah, they can't get them in colours yet."

This remark sent us off, sadly thinking that it is no light matter to try and teach the British Public science. Even some of our daily papers, we note, have given it up in despair, though really we should have thought that after the late series of letters on Lippmann's and Ives's work, more would have been known on this subject.

H. W. VOGEL, who has been writing several letters to our papers on Ives and his work, has, we hear, formed in Berlin, in conjunction with one Ulrich, a company, to reproduce some of the leading pictures in their gallery by means of chromo-collotype, and new and far superior results are claimed for the new workers.

MANY of our readers will remember that as far back as 1890, in the *Photographic Quarterly*, we gave a specimen of chromo-collotype done by Messrs. Waterlow and Sons, an English firm; and since then we have had given to us samples of every advance they have made. The conditions for perfect work in chromo-collotype are so difficult, that reluctantly everybody has come to the conclusion that it is not a commercial process.

On the other hand, printing in colours with half tone or "tint" blocks has yielded some very good results, and the latest examples shown us this week, not pulled on paper but on satin, are very fine. We hope to be able to shortly give our readers a specimen of this colour printing.

ALTHOUGH little more than a twelvemonth old, the Leytonstone Camera Club is a vigorous prodigy, and is anxious to show itself off, and for that purpose will hold an exhibition, which will be open to amateurs only, at the Masonic Hall, Leytonstone, on November 10th, 11th, and 12th The Committee offer eight silver and eight bronze medals in the following classes, and under the following conditions:—

CLASSES.

Members only.—(A) Landscape, seascape, and architecture. (B) Portraits and figure study. (C) Enlargements. (D) Lantern slides (set of six).

Open.—(E) Landscape, seascape, and architecture. (F) Portraits and figure study. (G) Enlargements. (H) Lantern slides (set of six).

CONDITIONS.

(1) Every exhibit shall bear the exhibitor's name and address on the back, also price, if for sale. (2) Every exhibit must be properly described on the official entry form and sent with entrance fee, which must be received by the Hon. Secretary not later than October 25th. Exhibits must be delivered, carriage paid, not later than October 31st. (3) All exhibits to be framed if possible; no unmounted prints will be allowed to compete. (4) The whole of the work, exposure, development, retouching, printing, and toning, must be the entire production of the exhibitor. (5) Any exhibit sold during the exhibition shall be subject to a commission to the Club of 10 per cent. (6) Exhibits having been awarded a prize previously will not be eligible for competition. (7) No competitor will be allowed to take two prizes of the same value; if awarded it will pass on to the next highest. (8) All exhibits not removed at the close of the exhibition will be returned to owners. Carriage forward at owner's risk. (9) Exhibits must bear no title or description whatever on the front, as they will be numbered and described in the official catalogue. (10) In Classes A, B, E, and F only direct prints are eligible. (11) The successful slides will be passed through the lantern each evening.

Mr. A. E. Bailey, of Rose Bank, South West Road, Leytonstone, will be pleased to give any further information.

MOST of our readers are aware of the existence of a particular school in photographic circles which claims that photography is rather more than a science, in fact, that it is an art. Probably also they are aware that several of the leading workers consider that at the P. S. G. B. exhibition the art has far less than justice done to it; so this school intend to hold an exhibition of their own. Whilst considerable rancour and ill-feeling has been introduced into the discussion Mr. A. Horsley Hinton has in this issue calmly and dispassionately placed before our readers what may be accepted to be the reasons why the claims are advanced. We need not, of course, point out that our columns are open to reply, should any one feel disposed to do so.

THIS is notoriously the age of cheapness, and whilst there are many amateurs who consider that the present prices charged for lenses are by no means exorbitant, there are others who, looking upon the lens as a bit of common glass in a bit of brass tube, consider the prices excessively high. To these the intelligence will be welcome that an optician of Baltimore, U.S.A., has perfected an ingenious arrangement, by means of which 400 lenses can be cut, ground, and polished at once. It is said to consist of a saw and a number of metal discs, both flat and oval, in which the glass is secured by clamps, and which are kept in constant motion by means of a pulley and wheel operated by a motor. Unfortunately, no information is given as to how long it takes to complete the lenses; all we want now is another ingenious arrangement which shall calculate the curvature of the surfaces and mount the lenses, and we shall be able to purchase first-class lenses at the same price as Oxford eye-glasses or spectacle lenses.

MR. HERMANN KRONE contributes to the current number of *Wiedemann's Annalen* some experiments with Lippmann's colour photography. He says that the correct rendering of the various colours depends upon a high degree of accuracy in the proportions of the finely divided silver haloid and the colour sensitiser, as also upon the temperature of drying, the exposure, and the development. If the essential conditions are not fulfilled, it may happen that yellows appear in the place of red, or that green exhibits a direct transition into violet, the blue being unrepresented. The result also depends upon the amount of water contained in the film, as influencing its thickness, and in the case of the solar spectrum upon the altitude of the sun. With a very long exposure the infra-red appears as a dark purple, and the ultra-violet as a yellowish-pink lavender colour. Mr. Krone has also succeeded in producing coloured photographs without Lippmann's mercury mirror. He simply covers the film with black velvet, exposing as Lippmann did, through the glass. In this case the reflection from the inner surfaces of the glass takes the place of that from the mercury. The exposure has to be considerably prolonged, and the colours towards the red end are less pure; but the blue, violet, and ultra-violet are quite as brilliant and well defined as in the mercury process.

PHOTOGRAPHY is often used in the household for decorative purposes, and for amusement in the shape of lantern slides and albums of views. But whilst these appeal to the older children, the following very easily made toy, suggested in a

contemporary, will please many of the younger children :—

"Take two negatives of the same person, but in two different positions; for example, a woman taking water at a pump. In the first picture the arm will be raised, then lowered in the second, and the two attitudes of the woman will be in relation with the two positions of the arm of the pump. Of these two negatives print two proofs, and place the two images (toned, fixed, etc.) on the two opposite surfaces of the same cardboard, the two images being reversed with reference to each other in the same manner as the medallions on a coin. Tie a string on each side of the cardboard; by twisting it between the fingers you will cause the cardboard to revolve rapidly, and you will obtain the sensation of the motion of a person pumping water."

We recorded last week the arrest of a photographic spy in Brisbane, and now the report appears that two Americans were found photographing forts on Canadian ground. The apparatus and plates were confiscated, and the Americans incontinently bundled back into the States.

During the old wet-plate days when quantities of collodion formed part of the stock-in-trade of every professional photographer, the fire insurance offices charged a very heavy premium in consequence of the increased risk. But since the introduction of dry plates these risks have been so reduced that one rarely hears of any accident from the use of collodion, which is now, except for photo-mechanical and lantern-slide work, only used for enamelling prints. An accident at a photographic enameller's in Paris, has unfortunately been the cause of four deaths, and such serious injury to two other persons as to render hope of life almost impossible. The enameller, with the assistance of his wife, was arranging his bottles when, according to the reports, the wife upset a sixteen-quart jar of collodion, and the liquid running over the floor, the vapour was ignited at a fire in an adjoining room, with the above disastrous results.

One naturally wonders what an enameller was doing with a four gallon bottle of collodion, and possibly the more true report is that one small bottle only was upset, and that other bottles exploded with the heat and concussion. Although ether is a very light liquid, having a specific gravity of about ·720, its vapour is very heavy, being two and a half times heavier than the air, and it is a well-known fact that when a bottle of ether or collodion is tilted on its side, the vapour may be seen to pour out like a stream of the liquid itself, and if the hand be held below, the cold produced is easily noticeable.

The above lamentable occurrence gives the opportunity to a daily paper, well known for its quasi-scientific writing, to treat its readers to a homily upon how much emulsion the sixteen quarts of collodion would make, thus unfortunately showing their ignorance of the process of enamelling.

It may be of interest and service to our readers of an inventive term of mind if we record the fact that two French gentlemen have just patented a hypodermic syringe all over the world. It seems that an article can be protected in sixty-four countries. Sixteen of these are in Europe, eight in Africa, four in Asia, twenty-seven in America, and nine in Oceania. The total cost of the patent in all these countries amounts to only £3,600.

The committee of the Hove Photographic Exhibition, to be held on the 21st and 22nd inst., have extended the time for sending in exhibits. Lantern slides can be received up to Monday, 19th inst., and prints to the evening of the 20th. Lantern slides and prints may be sent in to Mr. J. Williamson, 144, Church Road, Hove, from whom all particulars may be obtained. We published the text of the classes and conditions in our issue of July 29th, p. 62.

Chit-Chat.

Miss Catherine Weed Barnes, in a paper read before the Birmingham Photographic Society, gives English amateur photographers a good idea of the present position of amateur photography in America. Miss Barnes touched upon several matters which might well receive attention on this side of the "herring pond." In making a comparison between English and American apparatus, she pointed out some of the advantages possessed by the light American plate holders over the beautifully made but bulky and heavy English double backs, and having, during the last few years, had more than one camera in constant use fitted with light plate holders, I feel bound to admit that there is a great deal of truth in the lady's remarks. There is still room for improvement in dark-slides and particularly in special holders for films. Many amateurs who now use plates would use films if a light and reliable holder could be obtained for them. It should take the form of a solid back, and be capable of holding two films; it should be about half the weight and thickness of an ordinary dark-slide, and the shutters should draw completely out, and close with a properly constructed valve, and finally the film should be held down on all four sides. Such a slide can be obtained in America, but would it not be worth some English manufacturer's while to place a similar slide upon the English market?

Lantern-slide making and lantern slide exhibitions, as Miss Barnes reminds us, have become very popular in America, and the plan which obtains there of having slide-testing nights is one very much to be commended, and which might with advantage be adopted by some of our English societies. As many amateurs are now busily engaged in making slides for the winter, the opportunity is afforded me of having a good growl at the very inferior quality of many of the slides exhibited at society lantern shows. The committees who are responsible for the success of these entertainments should, in mercy to the producers of the bad slides, and to the audiences, have the discretionary power vested in them of rejecting slides which are not up to a certain standard of merit. Unfortunately for lantern slide-making as an art, the general public is not yet capable of discriminating between good and bad work, for frightful specimens of the "soot and whitewash" order frequently come in for the largest share of applause.

A great many amateurs have now returned from their holidays and are busy developing their negatives, and getting ready for the exhibitions. Many, of course, cannot choose their own time for the annual holiday, but the man who can defer it until late in September or October will have many advantages over his brethren of the tripod whom circumstances have compelled to take their holidays earlier. True it is that the working day is woefully shortened, but the advantages obtained in the direction of better atmospheric conditions more than compensate for the loss of actual daylight. Particularly is this the case in mountainous or hilly districts, when the presence of a slight haze, or mist, is indispensable in order to secure relief, and to avoid the unhappy flatness which is so characteristic of photographs taken in bright weather during the summer.

Will the P. S. G. B. Exhibition be a failure or a success? is a question exciting much speculatory opinion at the present time. I hear that pictures are coming in well, and from able men, though exponents of the "smudgy" school may not be very numerously represented. However, they

are, if report speaks truthfully, to have a "show" all to themselves by and bye, whereat, we are told, we shall see great things.

I AM not "down" on hand-cameras by any manner of means, and I greatly respect the man who can use one intelligently, but to see the user of one give a snap exposure on a dull day to a dark glen view, and exclaiming at the same time, "I have got it," was an experience which sent me home musing, a sadder and a wiser man, but wishing, oh! so ardently, than I was "one of those plate-making fellows," for surely, if nothing else, it is good for trade.

I AM stopping—but, no, the Editor does not wish me to disclose my identity, and wishes me, I think, to be mistaken for the "other fellow"—well, at a place where I have spent many a delightful holiday before. Four years ago I photographed my host's house, and sent him a print on gelatino-chloride paper, which, framed and glazed, has ever since hung on a wall which in winter is the reverse of dry, and during the summer is exposed for the greater part of the day to the direct rays of the sun. Notwithstanding these somewhat adverse conditions, the print is as bright and fresh as on the day when it first left the toning bath, which, by the way, Mr. Editor, was the combined fixing and toning bath, which you are, perhaps, not unjustly, so down upon. Now, my dear readers, please do not imagine that I am narrating this with the idea of impressing you with the belief that the unknown quantity addressing you is a most careful worker, for the probability is that that print was washed in a rather perfunctory and hasty manner. But the question of the permanency, or otherwise, of prints upon gelatino-chloride paper has of late attracted a good deal of attention, and evidence upon the subject is consequently instructive. No, it was not P. O. P., for at the time the print was made no English paper of the kind was obtainable. I warmly welcome English enterprise in this direction, but I am fain to confess that we get a better article from the "beastly furriners" than our English firms supply us with at present. This need not and should not be. But I have said enough—perhaps too much—for this week.

CHATTERBOX.

Letters to the Editor.

HYDROQUINONE DEVELOPMENT.

SIR,—It was with great pleasure that I read the letter of "W. H. H.," in the AMATEUR PHOTOGRAPHER of the 9th inst., upholding the claim of hydroquinone to be a good developer.

It has always been somewhat of a mystery to me why so many among the presumed leaders in photography, including yourself and your predecessor, have always exhibited such a prejudice against hydroquinone as a developer, have invariably decried it, and, moreover, so persistently *misused* it. I say misused it because in all the experiments I have seen the results of published, bromide has been added to it, and bromide is the thing that is *not* wanted, is, indeed, most harmful, and destroys its power to a great extent.

I do not wonder at the mistake as regards what may be called the rank and file of photographers, as most of them cannot be expected to know much of chemistry, the scientific side of photography; but certainly as regards those who aspire to be teachers and leaders, we might expect better things.

Some two or three years ago the results of some experiments with eikonogen as a developer were published by Mr. W. K. Burton, and a more unscientific and rule-of-thumb procedure was never, I think, exhibited; it was, indeed, pointed out at the time by a writer in *Amateur Work*.

Did Mr. Burton, in his experiments, proceed to study the characteristics of this new substance, and the best way to develop its powers, if it had any? Most certainly not. He made up his usual developer with pyro, and then another exactly similar solution, only substituting eikonogen for pyro, and, developing two pictures with the different developers, he came to the conclusion that eikonogen was a failure—and well he might. Why did he not add some iron to the pyro solution? and then he would have found that a failure.

What would in any profession be thought of a teacher who, on a new drug being introduced for a specific purpose—say to reduce fever—could tell his class that he had given it a trial, had exhibited it in the same dose as some other drug already recognised as a febrifuge, and found it of no use? Suppose, for instance, the drug was antipyrine, which is given in 25 and 30 grain doses, and he had used it as quinine in 1, 2, or 3 grain doses, methinks he would not remain a teacher long.

Mr. L. Clark, in the book "Development," published at your offices, compares developers, and gives the results in exactly the same unscientific method. I quote, "The pyro acid was sulphopyrogallol, and the quinol was Byk's, and was made up *the same as the pyro* The restrainer used was invariably potassium bromide." To my mind this method of comparing developers is most wonderful, and can only attribute it to the want of any scientific training.

All new developers should, like new drugs, be judged on their own merits, and used in the way peculiar and best suited to their own individual powers, and not as older and well-known developers are used.

I have tried pyro in all ways, but as a professional man I much desired to find some developer that was not quite so dirty (nothing could be more so), and after three or four years' trial I maintain that if used rightly, for certainty, cleanliness, latitude of exposure, and, indeed, in every photographic requisite, hydroquinone and eikonogen are both preferable to pyro.

I always now use a formula given by Mr. H. Wilkinson in the AMATEUR PHOTOGRAPHER of July 25th, 1890, only substituting some hydroquinone for part of the eikonogen, and varying the proportions of eiko, hydro and alkali (potass. carb.) somewhat according to subject, but *not* using bromide. The only restrainer this developer wants, except under exceptional circumstances, is water. These exceptional circumstances are very great over-exposure, and possibly views with great distances, and then only a small quantity of bromide should be added, not more than ¼ gr. to each ounce of developer. I do not myself use all fresh developer, an old developer freshened with a little new I find gives the softest and most brilliant negatives, and if the developer is made with distilled water, or rain water caught off a clean roof in the summer when there are no blacks, and well boiled and filtered, it will keep any time. I have some made eighteen months since. It is colourless still, and the used developer keeps also any time if well corked and stored in the dark. As to the statement that latitude of exposure is greater with pyro than with hydro-eiko, I believe it to be unfounded.

I have sent you some photographs for your inspection. No. 1, intending to use stop *f*/22, omitted to alter Iris diaphragm, leaving full aperture *f*/8; gave 2 sec. exposure, whereas by Watkin's metre, with *f*/8, should have had ¼ sec. bare, eight times right exposure; old developer with three parts of water, and 1 gr. potassium bromide to each ounce—result, a ghastly failure.

Nos. 2 and 3, taken within ten minutes of each other, one *f*/8, the other *f*/22, *both* 2 sec. exposure; old developer, same quantity of water, ½ gr. bromide to 3½ oz. developer. Which is the *f*/8 and which the *f*/22? The other groups etc., will, I think, show that plates can be and are developed by hydro, eiko, or both combined, without hardness resulting. In 4 and 5 you will notice tube of shutter on the left, also in 6 going under my chair. No. 5 was developed with Burgoyne's new "lightning" developer—true to its name as far as time is concerned, the negative was developed rather under three minutes.

The only drawback that I can find with hydro or eiko-hydro is slowness, if it be a fault; time is necessary, from 15 to 30 minutes often being required, but then I do not mind that. A stained negative is a thing unknown with this developer, or fog of any kind, except from great over-exposure, or light other than that through the lens.

Can you tell me why I get such a very poor result on matt

surface paper—Scholzig—with platinum toning? I use soda after toning and a few drops of ammonia in the fixing bath.

For negatives I always use the acid fixing bath.—Yours truly,

SURGEON.

[With regard to prints 2 and 3, which our correspondent asks us a question about, we should most decidedly say No. 2 was taken with *f*/8. Plain paper requires toning and fixing baths of half the ordinary strength. The whites in nearly every print sent by this correspondent are too hard, and he, quite unconsciously, furnishes us with another proof of the misuse of hydroquinone.—EDITOR.]

* * * *

SOCIETY FOR FOREST GATE.

SIR,—In reply to the query appearing in your last issue as to society for Forest Gate and Stratford. We are quite close to this district, and have a good number of members residing there. We have a roll of over ninety members, which speaks well for the success of the society. Our subscription is 5s. per annum. Our winter season commences in October. Informal meetings are held every Saturday evening at 8 o'clock at head-quarters, Assembly Rooms, High Road, Leytonstone, during this month, and we shall be pleased to see Mr. Wilton or any other gentlemen in the Epping Forest District, anxious to join a good society.—Yours faithfully, ALBERT E. BAILEY, Joint Hon. Sec.

Rose Bank, South West Road, Leytonstone.

* * * *

EASTMAN AND ILFORD P.O.P.

SIR,—Seeing the various letters from your correspondents anent the above, and particularly the communication from our mutual friend Mr. Welford, I have conducted a series of experiments in toning and fixing the gelatino-chloride papers of the two makes which are at present in the market. I find there is no need at all for a complicated toning bath or toning and fixing bath combined. The latter is particularly disastrous, by reason of prolonged immersion, which gives rise to stains and undue lightening of the colour of the print, while the tone produced by the original sulpho-cyanide bath is somewhat fugitive in the fixing bath, and, besides the possibility of the sulpho-cyanide being of questionable value, it rarely gives the same tone twice. Then again the whites of the prints require to be kept unstained; this can only be obtained by a fairly quick toning process, and I claim for my bath that this is peculiarly characteristic. The formula is as follows:—

Acetate soda	1 dram.
Phosphate soda	,,
Carbonate soda (common washing soda) ..	,,

Dissolve in 20 oz. warm water, and add 3 gr. chloride gold.

In this bath the prints tone in 10 minutes, or in the case of deeply printed proofs 15 minutes, and the tone, while slightly suffering in the fixing, is all that can be desired, and if any of your readers would like to see what it does in my hands and will send me a halfpenny stamp, I will send a specimen. I enclose specimen print for your observation.

For fixing bath I use the ordinary solution of hypo soda, 3 oz. to the pint, with 2 oz. of the above toning solution to the pint; this addition prevents the colour being "robbed" by the fixing solution.—Yours, etc., H. PICKERING

(Hon. Sec., Leicester Photographic Society.)

[The print sent by our correspondent is a very pleasing purplish brown with pure whites, and no signs of unequal toning.—EDITOR.]

* * * *

A NEW ALBUM WANTED.

SIR,—I am writing to you to ventilate a grievance which it seems to me requires now a remedy. I refer to the question of suitable books in which to mount photographs. The present ones seem to me unworthy of the position which photography has attained, while the market is inundated with mounts of very kind of quality and artistic excellence, for manufacturers seem to vie with each other in turning out really beautiful supports for the different classes of prints; yet we do not, I venture to say, find the same when we look at the so-called books in which we are asked to place our prints. They are mostly of white or greyish colour, and if the object of a mount is to enhance the beauty of a print, besides being merely a support, you will not obtain your wish by placing it on one of the pages of the ordinary books. And if through the medium of your excellent paper influence could be brought to bear, I feel sure some of our big houses would turn their attention to this subject, which appears to me so neglected, and issue small and large books, with plate-sunk mounts, say, and india-tint borders, and in other ways rendering these books more suitable for the reception of platinotype, bromide, and other prints.—Yours, etc.,

P. G. BULL.

General and Photographic Chemistry.—VII.

BY E. C. CONRAD, F.C.S.

THE NON-METALLIC ELEMENTS AND THEIR COMPOUNDS.—(*Continued*).

NITRIC ACID, $HNO_3 = 63$.—Oc.: In India, Peru, and other places, deposits of nitrates are found, produced by the action of atmospheric electricity on the oxygen, nitrogen, and aqueous vapour of the air and the action of the nitric acid formed on the alkaline substances contained in the soil. Thus in South America large deposits of sodium nitrate are found, called commercially Chili saltpetre, to distinguish it from potassium nitrate, also called saltpetre or nitre, the principal deposits of which occur in Asia and Spain. M.: By distilling a mixture of potassium nitrate with strong sulphuric acid. Eq.: $2KNO_3 + H_2SO_4 = K_2SO_4 + 2HNO$. Commercially, sodium nitrate is used instead of the potassium salt, because it is cheaper and a given weight produces a larger quantity of the acid, the molecular weight of sodium nitrate $NaNO_3$ being 85, while potassium nitrate, KNO_3, is 101. The operation is carried on in an iron retort lined with fireclay, and the acid condensed in earthenware jars. The reaction really takes place in two stages, an acid sulphate being first produced and this decomposing another molecule of the nitrate thus, (1) $NaNO_3 + H_2SO_4 = NaHSO_4 + HNO_3$ and (2) $NaNO_3 + NaHSO_4 = Na_2SO_4 + HNO_3$. P.: The pure acid is a colourless, strongly fuming liquid of S.G. 1·5. It generally has a yellow colour, due to the presence of oxides of nitrogen, from which it can be freed by a current of air. It freezes to a buttery mass at $-55°$. On heating, the strong acid is gradually decomposed until it possesses a S.G. of 1·4 at 15°, equal to 68 per cent. of acid when it distils over unchanged. A weak solution boiled under the ordinary pressures gradually becomes concentrated to the same proportion of acid and water. At a temperature of 260° C. nitric acid is decomposed into nitrogen tetroxide, N_2O_4, water and oxygen. Nitric acid parts with a portion of its oxygen with great readiness, and is therefore an oxidising agent of great power; phosphorus, sulphur, charcoal, and some of the metals are oxidised, the colour of indigo discharged, and the skin stained yellow by it. Nitric acid is miscible with water in all proportions.

Action of Nitric Acid on the Metals.—Aluminium, gold, and platinum are not acted on. Arsenic, antimony, and tin are oxidised to white powders As_2O_5, Sb_2O_5, SnO_2. All the other most important metals easily dissolve, forming nitrates. When nitric acid acts on a metal, hydrogen is never set free, but the oxides of nitrogen and free nitrogen are given off.

Action of Heat on the Nitrates.—Heat reduces the nitrates to an oxide of the metal with evolution of oxides of nitrogen and oxygen. Thus calcium nitrate, $Ca2(NO_3)$, on being heated forms calcium oxide, $CaO + N_2O_4 + O$. The nitrates of mercury and silver are reduced to the metallic state at comparatively low temperatures.

Tests.—If nitric acid or a solution of a nitrate is added to a strong solution of ferrous sulphate, and a small quantity of strong sulphuric acid is carefully added so as not to sensibly raise the temperature, a brown ring will be formed.

All the nitrates are soluble in water. Nitric acid stains woollen fabrics red, and this colour is not removed by ammonia like that caused by sulphuric and hydrochloric acids.

Uses.—Nitric acid is largely used in manufacture, especially for the production of nitrate of silver and gun cotton, pyroxilin and other nitrated cellulose compounds.

OXIDES OF NITROGEN.—The following compounds of oxygen and nitrogen can all be obtained by indirect means from nitric acid, and they all have a tendency to combine with water and oxygen to reform that acid. They are—Nitrous oxide, N_2O; nitric oxide, N_2O_2; nitrous trioxide, N_2O_3; nitric peroxide, N_2O_4; nitric pentoxide, N_2O_5.

Nitrous Oxide, nitrogen monoxide, N_2O.—M.: By the action of dilute nitric acid on zinc. Eq.: $4Zn+10HNO_3=4Zn(NO_3)_2+5H_2O+N_2O$. P.: Colourless gas, liquid at a pressure of 30 atmospheres. It is easily decomposed by heat, and the liberated oxygen supports the combustion of such bodies as a glowing splint, burning phosphorus, or other substance that gives out sufficient heat to decompose it. It is very soluble in water, and gives no red fumes with N_2O_2. It is distinguished from oxygen by these last two properties.

Nitric Oxide, or nitrogen dioxide, N_2O_2.—M.: By the action of nitric acid on copper. Eq.: $3Cu+8HNO_3=3Cu(NO_3)_2+4H_2O+N_2O_2$. P.: Colourless gas; when exposed to air it immediately unites with the oxygen, giving red fumes of N_2O_3 and N_2O_4. Insoluble in water, more stable than N_2O, requires a high temperature for its decomposition; burning phosphorus will do so, and continue to burn in the liberated oxygen. If nitrous or nitric oxides are passed over red-hot copper an oxide of the metal is formed and nitrogen gas set free.

Nitrous Trioxide, or nitrogen trioxide, N_2O_3.—M.: By the action of nitric acid on arsenious oxide. Eq.: $As_2O_3+2HNO_3=As_2O_5+H_2O+N_2O_3$. P.: A reddish-brown gas, soluble in water, forming nitrous acid, $N_2O_3+H_2O=2HNO_2$. It is converted into a blue liquid on exposure to cold. This oxide is of importance in the manufacture of sulphuric acid

Nitric Peroxide, N_2O_4.—M.: By the decomposition of lead nitrate by heat. Eq.: $2Pb(NO_3)_2=2PbO+O_2+N_2O_4$. Also by the union of nitric oxide with oxygen. P.: A reddish-brown gas like the trioxide, soluble in water, forming a mixture of nitrons and nitric acids; hot melted potassium burns in it. When perfectly dry it forms a white crystalline compound.

Nitric Pentoxide, N_2O_5.—M.: By passing dry chlorine gas over dry silver nitrate. Eq.: $4AgNO_3+2Cl_2=4AgCl+O_2+2N_2O_5$. P.: It is a colourless crystalline compound, very unstable. With water it produces nitric acid, $N_2O_5+H_2O=2HNO_3$.

NITROUS ACID, HNO_2.—O.: Nitrites are found in water contaminated with sewage, and the acid in the water produced by the combustion of hydrogen in the air. M.: By the combination of nitrous trioxide with water. P.: The acid itself is very unstable, and it forms a series of somewhat unstable salts, termed nitrites. *Tests*: Solid nitrites warmed with dilute hydrochloric acid give brownish-red fumes. Dilute sulphuric acid and solution of ferrous sulphate give with solutions of nitrites a brown colouration. Nitrites can be distinguished from nitrates by giving with dilute sulphuric acid and solutions of potassium iodide and starch a blue colour.

HYDROXYLAMINE, $NH_2OH=33$.—M.: By the action of nascent hydrogen upon nitric oxide. This base cannot be obtained pure, is known only in solution, is very volatile and easily decomposed. Hydroxylamine hydrochloride, $NH_2OH, HCl=69{\cdot}5$. M.: By passing a current of nitric oxide into a series of flasks containing tin and hydrochloric acid with a small quantity of platinum tetrachloride solution (to facilitate the evolution of hydrogen at the ordinary temperatures). The solution is then purified by precipitating the tin with sulphuretted hydrogen, filtering and evaporating to dryness, and washing the salt with strong alcohol. P.: Easily soluble crystalline compound; the solution of this salt does not oxidise by exposure to the air. U. P.: As a developer. Messrs. Egli and Spiller, who first introduced it, recommend the use of equal parts of the carbonates of soda and potash as an accelerator, while Chapman Jones gives the following formula:—

Hydroxylamine hydrochloride	2 gr.
Caustic soda	3 ,,
Potassium bromide	½ ,,
Water	1 oz.

It gives with gelatino-bromide plates a black image, free from stains, and allows of slightly over-exposure without injury. *Tests:* Hydroxylamine and its compounds give with copper sulphate a green precipitate, and on warming this red copper oxide is thrown down.

Reviews.

Fotografisk Tidskrifts Arsbok, 1892. Published by Albin Roosval, Stockholm.

This annual visitor, which emanates from the office of the *Fotografisk Tidskrift*, is handsomer than ever. It contains numerous articles by well-known writers, a summary of photography, and is characterised by the beauty of its illustrations, which include no less than three photogravures, four collotypes, one chromotype, besides numerous process blocks, and a matt chloride cloud print of great beauty.

Practical Guide to Photographic and Photo-mechanical Printing Processes. By W. K. Burton. Second edition. Published by Marion and Co., 22 and 23, Soho Square, London, W. Price 4s.

This work has long been one of the standard works, and we can heartily welcome the second edition, which has been considerably enlarged and revised. The first part of the book is devoted to an historical sketch of photographic and photo-mechanical printing. The second part to ordinary printing-out processes, such as silver, platinotype, iron and uranium processes, bromide and carbon work. Comparing this with the previous edition we find considerable revisions and additions even with this part, but that part of the work devoted to photo-mechanical work has been entirely re-written and re-modelled, and now forms a useful and complete practical handbook.

The work is well printed and neatly bound, and should be welcomed by the tyro as well as the more advanced hand.

Catalogues.

YORK AND SON, 67, Lancaster Road, Notting Hill, W.

This well-known firm of lantern slide manufacturers have sent us their twenty-third annual supplemental catalogue of new lantern slides and lecture sets, of which a brief synopsis is given. After having occupied their premises for twenty-nine years, this firm have now moved into more commodious premises at No. 67, Lancaster Road.

G. W. WILSON AND CO., of 2, St. Swithin Street, Aberdeen.

List of Studies by Frank M. Sutcliffe.

F. M. Sutcliffe has long held one of the premier positions as an artistic worker, and Messrs. G. W. Wilson and Co. are now issuing a series of 12 by 10 studies executed in carbon of all colours at the low price of 3s. 6d.

NEW LANTERN SETS.

This firm also sends us a catalogue of the new slides they have added to their well-known series. These include travels through Europe, Africa, Egypt, New Zealand, etc.

ILLUSTRATED SUPPLEMENT,

Monthly Competition, No. 39, "Sea Pieces and River Scenery."

WHILST this Competition has not been quite so heavy in numbers, we have to congratulate ourselves and our competitors on having sent in far better work, as a whole, than we have had in previous Competitions. The task of deciding which were to be the first three prints was no easy matter, and the judges meanly suggested that the easiest way out of the difficulty was to give the first six competitors a Silver Medal each, the next six a Bronze Medal each, and certificates to the remainder of the first class. Unfortunately, we could hardly fall in with this suggestion, but we have awarded an extra certificate, the judges declining to separate two competitors.

Taking the work as a whole, we have no hesitation in saying that many of the competitors whose work is this time placed in the third class would in previous Competitions have been amongst the second class. And whilst to these competitors the result may be disappointing, to us the result is extremely gratifying. Our Competitions are intended for the improvement of work, and we hope that this Competition will be the commencement of a period of improvement.



No. 1.] "A GOOD START." SILVER MEDAL. [*J. A. Pollock.*

The quality of the work sent in, and included in Classes I. and II., is so nearly equal that, with the exception of the first six pictures, we are unable to place them in the order of merit.

CLASS I.

1. POLLOCK, J. A. (Belfast).—"A Good Start." Taylor and Hobson's R. R, *f*/16; 1-80th sec., July, good light, mid-day. "This shot was taken with the camera in the hand; no stand used." A whole-plate chloride print, full of life and motion, and with a very effective sky.

2. LEES, H. (Didsbury).—"In Chee Dale." Suter 3 B Aplanat, *f*/45; 20 sec., October, fair light, 2 o'clock. A whole-plate, rough-surface bromide print, of exceptionally fine technique.

3. WILLIAMSON, J. (Hove).—"Trawlers off Brighton." Taylor and Hobson's R. R., *f*/11; 1-5th sec., May, hazy sunlight, 7 a.m. "This was taken from small rowing boat." A 5 by 4 rough bromide print, toned with uranium; in appearance this print is far more like a very good sepia drawing or etching.

3A. RICE, W. (East Dulwich).—"Barges on the Thames." Ross's R. R., *f*/16; 1-10th sec., June, sunshine, noon. A 5 by 4 chloride print, of exceptional brilliancy and pluck. The competitor was unusually fortunate in being able to obtain so clear an atmosphere in the heart of the city.

4. TIMMINS, J. C. A. (Runcorn).—"Eventide." R.R. French, *f*/11; seascape (*f*/32) 2 sec., cloud about 1 sec., April, good diffused light. "The above negative is composed of two negatives, seascape and clouds." A 9 by 7 chloride print, and really suggestive of evening, not overdone in printing, and yet sufficiently low in tone to give the desired idea.

4*a*. WILCOX, W. (Fulham).—"Waiting at the Lock." Optimus R.R., *f*/32; 1 sec., June, bright sunlight, but very cloudy, 10 a.m. "I waited a long time with a chance of a boat coming along, and was at last rewarded. First time of entering any competition." A half-plate silver print, which might have had just a little less foreground. It will be noted, by the shadow of chimney on house, that the lighting is quite in front, and a very successful result has been obtained.

5. ASHBURN, W. D. (Bromsgrove). — "Early Morning on the Clyde." Taylor and Hobson's R.R., *f*/22; ½ sec., April, diffused light, misty, 8 a.m. "Taken from the deck of the Liverpool steamer on arrival at Greenock, the mists rolling down the river with occasional gleams of sunlight." A 6 by 3½ platinotype print, and one of the very finest effects of a misty morning we have seen.

5*a*. DUNCAN, A. H. (Glasgow). — "On the Clyde." Taylor and Hobson's, *f*/8; 1-10th sec., August, weak sunlight, 8 o'clock. "Taken from one of the Cluthas in Glasgow harbour, H.M.S. *Gibraltar* on the left, and a large four-masted vessel, the *Cedarbank*, in the channel, being towed down with tug in front and tug behind to steady her. This characteristic view was obtained quite unexpectedly." Another Clyde view, but in its character quite as good as the one above.

GOLDING, A. J. (Tufnell Park). — "Eventide, Strand-on-the-Green." Beck's R.R., *f*/16; 2 sec., August, diffused light, 6 p.m. A very clever 5½ by 4 study on matt chloride paper, which strongly recalls one of the collotypes in our "Annual."

MACADAM, D. (Haltwhistle). — "Derwent Water." Hockin's Wide-angle Rect., *f* 32; 3 sec., June, bright sunshine. A whole-plate matt chloride print of very fine technical work, and with a charming rendering of distance.

UFFINDELL, F. (Finsbury).—"Mouth of the River Yare. Smacks being Towed out to Sea." Hockin and Wilson's R.R., *f*/16; drop shutter, July, dull, 11.30; taken from Gorleston Pier. A very good half-plate chloride print full of motion.

JONES, W. L. (Sale).—"In Bolton Woods." Wray's R.R., *f*/20; slow shutter, bright sunshine, midday. "This view was taken last Easter whilst on a walking tour in Yorkshire, and by a hand-camera of my own construction." A good proof that artistic work may be done by a hand-camera.

EYRE, H. S. W. (Crowboro').—"Placid Waters." Landscape lens, *f*/30; 8 sec., August, dull, 5 p.m. A half-plate silver print of

good quality, the only offending bit being the leaves in the right-hand corner.

ANDERSON, E. (Newcastle-on-Tyne).—"Sunshine after Rain." Single lens, *f*/32; ½ sec., July, brilliant sunshine, 3 p.m. "Taken immediately after a heavy shower." A half-plate matt-surface chloride print of rich, warm tone, with a very fine sky.

HIRST, E. (Cleckheaton).—"Douglas Bay, Isle of Man." Half-plate view, *f*/20; cap on and off, June, bright sun shining, 11 a.m. "This view was taken from the sea on a half-plate. It is a contact print, the clouds being in the negative." A little narrow strip of a picture measuring 6 by 2½, slightly over-printed, but very effective.

TIMS, J. (Ewell).—"Closing the Lock Gates." Optimus Euryscope, *f*/16; 1-10th sec., August, sunshine, blue cloudless sky, 3 p.m. "This lock is on a tributary of the Thames." A very good half-plate platinum print, full of softness and detail.

GLAZEBROOK, T. (Ashton-under-Lyne).—"Time and Tide wait for no Man." Dallmeyer stereoscopic lens, *f*/16; slow shutter, July, diffused light, 6 o'clock. "Taken at Port Erin, Isle of Man." A quarter-plate matt chloride print, and a very effective arrangement of light and shade.

BECKWITH, W. (Leeds).—"Pull's Ferry, Norwich." French R.R., *f*/22; 1 sec., August, bright sun with white clouds, 10 a.m. "I only began the fascinating pastime last summer. Negative and print absolutely untouched." Half-plate matt chloride print, just wanting in brilliancy.

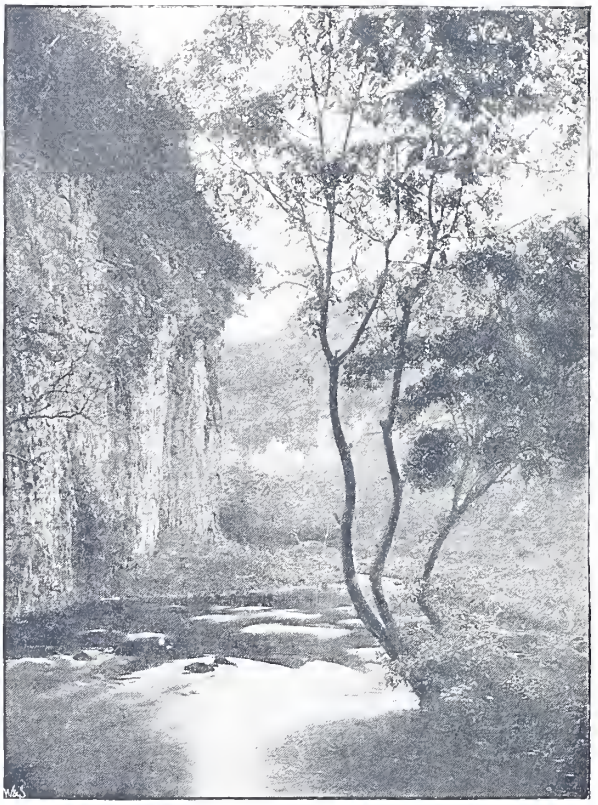
GROVES R. (Blandford). —"White Cliff Mill, Blandford." R.R., *f*/16; 1 sec., June, bright light, noon. A very pleasing spot, but spoilt by a little too much foreground and the pink tinge of the paper.

BROWN, W. A. M. (Leeds).—"Meeting of the Waters, Bolton Abbey.' Ross R.S., 50 sec., August, dull and hazy, noon. This is a platinotype of unusual size, 25 by 22. Technically the print is very fine, but it could be improved by cutting about three inches off the top and bottom, and by printing in clouds.

CLASS II.

SOLTAU-SYMONS, G. (Plympton). — "The Ebbing Tide." Ross, R.S., *f*/32; 2 sec., July, bright, 5 p.m. A 9½ by 7 chloride print with a very fine sky, but the horses, cart, and man are right in the centre of picture.

BALL, F. R. (Clapham). — "Lowestoft Harbour." Single lens, *f*/10; June, bright light, 1 p.m. "Taken from the pier at Lowestoft, as the smack was going out of harbour." A half-plate sepia platinotype, of very great softness.



No. 2.] "IN CHEE DALE." [H. E. Lees.
BRONZE MEDAL.

ATKINS, R. (Waterford). — "The Nord Fjord, Norway, from Faleide." Optimus R.R., *f*/32; 10 sec., July, wet day. "The view is taken from the grounds of Tenden's Hotel at Faleide on the northern shore of the Fjord, and looks away towards the mountains, enclosing the Buxtal and Kjendalo glaciers." This is a whole-plate matt chloride print, the subject being very fine, but spoilt by unequal toning.

VULLIAMY, E. P. (Glasbury).—"Three Cliff Bay." R.R., *f*/20; shutter, June, dull afternoon. "The wind was so strong that the camera shook, and only shutter exposure was possible." A whole-plate bromide; a very good effect of a rocky shore, suggestive of storms.

GOSLING, G. (Hornsey).—"On the Colne." R.R. lens, *f*/22; 2 sec, June, sunlight, 1 p.m. A half-plate platinotype print of good technical quality.

LUDDINGTON, L. H. (Littleport). "St. John's College Chapel, Cambridge." Dallmeyer R.R., *f*/24; 1 sec., August, good sunlight, 3 p.m. "Taken from the river at The Backs. The plate being a thick coated one, I was rather puzzled to know when development had been carried far enough, and consequently the negative is rather thin." Half-plate platinotype, with far too much foreground.

SEVERS, J. (Kendal).—"On the Kent." Ross' single, *f*/15; 3 sec., August, bright light, noon. A charming little quarter-plate platino study, bright, and full of sunshine.

ALCOCK, F. (Twickenham).—"A Desolate Spot." Ross' Orthographic, *f*/22; 1 sec., August, sunlight, 6 p.m. "South side of the Island of Portland, Dorset." A whole-plate platinotype, and a very good carrying out of the title.

ROSSER, C. W. A. (Malta).—"At Head of Quarantine Harbour, Malta." Single lens, *f*/16; 1-20th sec., February, sun behind thin cloud, nice soft light, 8 a.m. "Plate required most careful development. The negative resulting was too weak to print from, but after intensification produced a nice density." By no means a bad little half-plate print, but there is just a little too evident arrangement.

LEWIS, A. H. (London).—"Durham Cathedral, taken from the Wear." Optimus R. R, *f*/32; 2 sec., July, bright, 3 p.m. "Previous to exposing, it threatened to rain, but cleared off, and after waiting three-quarters of an hour, exposed under a blue sky." A very good half-plate view of a well-known spot, slightly wanting in brilliancy.

KINGSFORD, R. L. (Gt. Malvern).—"The Church Pool on the River Conway, Bettws-y-Coed." Single landscape lens, *f*/22; 2 sec., August, diffused light, 6 p.m. "A half plate platinotype print of a very pretty spot, utterly spoilt by two incongruous figures.

TYLEE, C. (Shoreditch). — "Eel Sniggling." R.R. lens, *f*/32; 3 sec., May, good light, 10 a.m. A whole-plate chloride print of a hideous pink colour, and the eel sniggler is the least important thing in the picture.

THOMPSON, H. (Harrogate).—"Pont Newydd, Aber, N. Wales." Laverne, R.R, *f*/25; 1½ sec., July, dull and overcast, 11.30 a.m. "Taken on a very windy day after heavy showers, and only moderate light. Sun nearly obscured." A quarter-plate silver print which has been spoilt by over-printing.

GAPE, C. (Scole).—"Syleham Mill, on the Waveney." Swift's Rapid Paragon, *f*/22·6; 1 sec., August, sunshine, 1 p.m. A quarter-plate silver print of a pretty spot, spoilt by over-printing.

SUTHERLAND, J. W. (Newcastle-on-Tyne). — "Oddicombe Bay, South Devon." Optimus, *f*/16; shutter, April, bright light, mid-day. A half-plate matt-surface chloride print, showing careful work.

ELPHICK, E. J. (Hastings). —"Landing the Night's Catch." Lancaster's R. R. lens, *f*/16; shutter, June, rather dull light, 6 a.m. A half-plate chloride print, rather over-printed.

TOWNSEND, C. J. W. (London, S.E.).—"On the East Lyn, Lynton, North Devon." Optimus R. R, *f*/32; 4 sec., June, sunlight, 1 p.m. "I had no choice as to the time of day, as my stay at Lynton was only about three hours. The light being very bright; sun almost shining in lens." A very pretty little quarter-plate study.

RITCHIE, D. (Edinburgh).—"On the Tweed, near Peebles." Taylor and Hobson's R. R., *f*/16; 1½ sec., July, bright sunshine, 4 p.m. "The print was dried on ground glass, and mounted when dry." A good half-plate picture, spoilt by the hideous pink tint.

NETTLESHIP, T. W. (Bawtry).—"Sprotborough Mill on the Don." Optimus R.R., *f*/32; 3 sec., May. Moderately good light, setting sun, 6 p.m. A half-plate chloride print, which has yellow whites and is slightly overtoned.

EALLEN, J. (Sheffield).—"Bridlington Harbour." Ross's R.R., *f*/8; 1-30th sec., June, sunshine, 3 p.m. A whole-plate chloride print, which could be considerably improved by trimming.

WIGHTMAN, G. J. (Lewes).—"Rocky heights that overlook the breadth of ocean." Taylor's R.R., *f*/12; shutter, sunlight, with very slight haze, 11 o'clock. "Taken quickly, in order to include a flock of gulls." A whole-plate platinotype print, which would be improved by suitable clouds.

DUNKERLEY, V. (Burnley). — "Scene near Vix, Norway." Reynolds' 3½ focus, *f*/32; ½ sec., July, brilliant light, noon "Distance remarkably clear, water clear and formed powerful reflector." A quarter-plate chloride print of good technical quality, utterly spoilt by the pink colour of paper.

GAINE, R. L. (Sunderland).—"A Misty Evening in the Derwent Valley." R R. London and Paris Optical Company, *f*/32; 18 sec., June, very dull light, 7 p.m. "Rain was commencing just as exposure was made." Print good technically, and a pretty spot

BANKS, J. F. (Norwich) —"Thorpe, River Yare, near Norwich." Beck's R. R., *f*/22; 1 sec., July, sun behind cloud, just breaking through, 11 a.m. "Thorpe, on the River Yare, about two miles from Norwich, and on the Yarmouth Road. Taken from Hart's boat-house, looking towards Norwich." A half-plate silver print, not from the very best point of view, for this spot.

ARNOLD, J. O. (Sheffield).—"Conway Quay." Wray's R. R., *f*/32; ½ sec., July, strong sunshine, 4 p.m. "A very large Norwegian brigantine had hauled into the Quay, and was taking in ballast. The sails had been shaken out to dry, and the order was just given to furl—hence the half-furled royal." A brilliant half-plate matt-surface chloride, showing very good work.

BROWN, A. (Liverpool) —"Evening on the Mersey." Eureka R. R., *f*/16; shutter, June, bright light, sun behind cloud, 6 p.m. A half-plate chloride print, of which we venture to suggest the improvement that might be effected if the sky-line was straight, and the whole not printed so deep.

BARCLAY, H. (Salisbury). — "The Golden Evening Brightens in the West." Lancaster's rectigraph, *f*/16; shutter, June, good light, shortly before sunset. A half-plate silver print of a pleasing subject, which we think would be far better on rough-surface paper.

MACKENZIE, J. G. S. (Edinburgh).— "Currie, on Water of Leith, near Edinburgh." Taylor and Hobson's R. R., *f*/32; 1½ sec, July, sunlight, 3 p.m. A half-plate chloride print, just wanting in brilliancy.



No. 3.] "TRAWLERS OFF BRIGHTON." [*J. Williamson.*

[CERTIFICATE]

CLASS III.

Acton, M. ... Pau
Adams, H. J. Ambleside
Adams, H. J. Beckenham
Adkins, C. H. Liverpool
Bibby, W. H. ... Blackburn
Brook, S. York
Bryant, G. E. ... Manchester
Colbourne, H. D. ... Poplar
Cooke, A. G. ... Tottenham
Craik, J. W. ... Forfar
Currie, J. E .. S.W.
Firth, G. F. ... Wakefield
Fitzgerald, E. H. ... Finchley
Harriman, J. Henley-on-Thames
Harris, J. and S. ... Liverpool
Hertslet, E. C. ... W. Norwood
Human, E. ...New Swindon
Illingworth, J. A.... Reading
Kauffmann, J. ... Zurich
Kendal, E. M. Nr. Manchester
Livingstone, J. ... Aberdeen
Mackin, F., jun. Willesden Green
Manners, S ... Manor Park
Michie, R. H. ... Hamilton
Moss, C. Sydenham
Myers, J. C. ... Newbury
Nelson, J. Preston
Owen, C. Reading
Parker, A. H. ... Derby
Pasco, G. S. ... N. E.
Patterson, T. ... Preston
Peck, E. S.... ... Cambridge
Power, G. B. ... Thomastown
Rhodes, J H. ... Kendal
Robertson, B. ... Glasgow
Robinson, J. .. Darlington
Rolyat, G. W. V. ... Woolwich
Rout, S. Huntingdon
Stansfield, J. ... Manchester
Smith, D. Penicuik
Smallridge, C. ... Ivy Bridge
Smith, G. Oxford
Spalding, F. W. ... Norwich
Speirs, W. R. ... Haltwhistle
Thirkettle, W.L. Stoke Newington
Twemlow, S. P. ... Sandback
Warren, A. C. ... Braemar
Wilding, P. P. ... Preston
Wilding, R.... ... Preston
Wise, W. ... Cadbury, Bath
Wittington, E. ... Wakefield

CLASS IV.

Adams, F. H. ... S. W.
Ball, G. ... Heckmondwike
Bassett, R.... ... Tonypandy
Beedie, W. A. ... Aberdeen
Binns, J. T. ... Todmorden
Brimner, B. G. L.... S. Norwood
Brown, R. Haslingden
Burnand, A. B. ... W. Brighton
Buttifant, G. A. ... Islington
Cole, J. H. Innishannon
Crawford Kingstown
Dart, W. B.... ... Torrington
Deane, J. Tralee
Douglas, T... ... Gateshead
Emery, G. Hove
Fairweather, W. ... Ibrox
Falconer, D. S. ... Edinburgh
Ferguson, T. ... Kilmarnock
Harding, G. ... Stourbridge
Harris, H. Hayward's Heath
Harrison, J. G. ... Darlington
Harrop, J. A. ... Birmingham
Henry, J. P. ... Lewisham
Jones, H. P. ... Horncastle
Joy, R. C. Ormskirk
Kean, J. Darlington
King, T. Grimsby
Kinghorn, P. ... Gateshead
Kirwan, J. H. ... Tralee
Knowles, J. A. ... Wallasey
Lawless, R. E S. ... London
Lawson, J. Larkhall
Lindsay, A. ...
Lounds, R. H. W. Hampstead
Micklem, E., Mrs. ... London
Niblett, J. Miss ... Ledbury
Nye, H. London
Partridge, F. ... Launceston
Payne, W. ... Leicester
Pope, F. J. W. ... London
Popham, H. W. South Shields
Pyne, F. J. M. ... Harrow
Robertshawe, J. Hebden Bridge
Sharland, G. F. Rev. Huntingdon
Smith, A. E. Putney
Tapson, E. J. Brockley
Thompson, J. Burton-on-Trent
Wawn, W. Darlington
Whitaker, J. Wolverhampton

Commercial Potassium Cyanide. — According to the *Chemiker Zeitung*, 1892, No. 64, Dr. Klayser, of Nuremberg, read a paper on this subject before the eleventh meeting of the Free Association of Bavarian Representatives of Applied Chemistry. The kinds of potassium cyanide at present generally met with in commerce consist generally of a mixture of potassium cyanide and sodium cyanide. If we simply determine the quantity of cyanogen, and calculate the result as potassium cyanide, a commercial sample containing 15 per cent. impurities may easily be reported as potassium cyanide of 100 per cent. The presence of considerable quantities of potassium cyanide is further not indifferent in many technical applications. Thus in preparing galvanic gold baths from gold as anode in a solution of potassium cyanide and sodium cyanide, by means of the galvanic current, there is obtained not a readily soluble sodium auro-cyanide, but a very sparingly soluble sodium auro-cyanide. But its origin is at once deposited on the anode, and we do not succeed in obtaining a useful gold bath. In the view of the speaker it is possible that the advice of Wagner has been followed in the manufacture of ferro-cyanide. Wagner, mainly from technical reasons, recommended the use of a mixture of potash and soda, and that the resulting mixture of potassium and sodium cyanides should be sold under the name of cyanogen salt. Professor Fresenius confirms the presence of sodium ferro-cyanide in the potassium ferro-cyanide of commerce.

Dark-room at Lowestoft.—Mr. Clark, chemist, of S. Lowestoft, has fitted up a dark-room which is free to customers for changing and for developing, at the price of chemicals only.

Darlington.—The monthly meeting was held on the 12th inst. Mr. Ensor presided in the absence of the President. Mr. J. G. Sinclair read a most interesting paper on the "Platinotype Process," illustrated by some beautiful prints from his own negatives. Mr. Sinclair concluded a most instructive paper by developing some prints by means of the cold-bath process, which were very successful.

The Office and the Future of our Exhibitions.

By A. Horsley Hinton.

Photography has for some time past been advancing strong claims to recognition as an art proper, and with a measure of success. Many of the most able workers in photography have logically enough shown why such recognition should no longer be withheld, and their persuasions and arguments have convinced some and have brought very many others to half acknowledge that which they before ridiculed. It will, however, have occurred to many that if the really artistic be possible by photographic means, then it should of itself be sufficiently apparent, and all the writing and the hours of talking which have been expended in pleading its cause should be wholly unnecessary.

We have, however, to remember the exceptional position in which photography is placed—a position which has made it imperative to separate it from its antecedents, and to set it upon a new footing, apart from all old associations.

The photographer who employs the accepted methods but purely with an artistic aim, is under the necessity of saying that the particular kind of performances which he advances as a new means of artistic expression is not photography as generally known and accepted as the work of camera and lens, but the particular description of work which has resulted from the use and modifications of photographic implements in the hands of men of natural artistic instinct.

Never, then, has there been so urgent a need unsatisfied—a need of a new name which whilst recognising the means whereby the results are obtained shall at the same time adequately distinguish the photographs which have as their aim purely the attainment of an artistic ideal from the average mechanical work which is produced by those who use the apparatus only as a machine, and who do not attempt, do not desire, and, perhaps, could not if they would, import anything of individuality, of sentiment, or personal expression into visible results of the employment of photographic methods.

It is not sufficient to describe these latter as dilettante, it is not the triviality of purpose that prevents, for in them there may be a very sincere and earnest purpose, but rather that the purpose is of a distinct and different order, and possibly lacks elevation and dignity, and which, even when zealously pursued to its utmost, will be transient in effect or even ignoble. We have ever the want of some descriptive term by which to distinguish between the photography which illustrates the wonderful capabilities of the instrument, and the photography which illustrates the artistic mind, or, in other words, succeeds in expressing an idea or a group of associated ideas, in the imagination of the artist, the ideas themselves but an impression received from some scene in nature.

We have engraving, and etching, and mezzotint, and photography—each a possible means of artistic expression if used aright according to their varied methods—and whilst the three former are universally admitted as art, the latter still occupies a very unsatisfactory position, a state of purgatorial transition, until such time when it shall have been purged of its old failings and adapted for a higher sphere.

With those who have lived amongst photographers, becoming intimately acquainted with their widely different work, and are open-minded and without bias, some may be found ready to recognise the art claims of the more advanced of modern photographic pictures, and will agree that those examples of photography produced by intelligent and essentially artistic men do demand a judgment and consideration quite apart from the great mass of photographs with which the world has become inundated, and must individually be admitted as equal to many, and superior to some, of the results produced by contemporary monochrome methods.

But to the general public, and even to the cultivated classes, photographs are still photographs, and, no matter how excellent or how satisfactory, are still regarded not as pictures in any sense, but at best with the same feeling as curiosities and souvenirs of travel and place.



No. 3a.] "BARGES ON THE THAMES." [*W. Rice.*

CERTIFICATE.

We encountered the effect of this prejudice in a practical form quite recently when in conversation with a well-known picture dealer in London.

Noticing among the water-colour drawings and paintings in the small gallery a few mezzotints, we tested our picture dealer's knowledge of modern photography, and was pleased to find that he was well acquainted with some of the most modern developments of artistic photography; and on being asked, he admitted that in some cases he should prefer them to mezzotints which he considered they somewhat resembled. He believed that were he to show them they would attract the attention of his clients and visitors, and yet it would be useless for him to offer them for sale, because on being asked what they were he had no alternative but to call them "photographs," and he should expect his customer to turn his back upon them in consequence, and he himself would lose caste as a "dealer in works of art."

The position is indeed a sorry one; it is a case of popular prejudice paralysing the endeavours of a thoroughly sincere school of artistic workers, a possible fine art crippled in its efforts to assert itself by the abundant misuse of its methods, and its best and legitimate results condemned unheard because of the multitude of worthless productions under the same name and title which have preceded them. The false light in which art photography is generally seen, and the universal misappreciation from which it suffers, is, we believe, to no small extent attributable to the circumstances under which photographs collectively are publicly shown such as in our exhibitions. The more important the exhibition the greater its influence, and the greater the responsibility which devolves upon those who direct it and lay down the lines for its management.

From the Club exhibition, which is confined to the works of its

own members, to the International exhibition, which makes its walls available to all, whether professional or amateur, whether of this country or of any other, in each case the exhibition is the direct means of communicating to the outside world substantial evidence of the progress and capability of that which is exhibited. It is reasonably supposed that such an exhibition is



No. 4.] "EVENTIDE." [*J. C. A. Timmins.*

thoroughly representative of the best contemporary work, and is hence the means whereby the public forms its estimate—not the general public only, but also such particular sections of it who are really interested, and who probably go to examine the quality and character of the exhibits for special purposes, and with definite object in view. To a well-appointed photographic exhibition it may be sometimes possible to allure those whose opinion may be worth having, but who would never be at the trouble of searching out for themselves and ascertaining the true merits of more or less isolated and obscure artists, or who would never pause to seriously consider what possibilities might be in the future for photography. Hence we believe the exhibitions are our most powerful instrument in advancing the higher art claims of photography outside the circle of the cognoscenti.

To be sure, public opinion, some may say, is not worth having, and that we need not seek to cultivate its approbation. This is true, no doubt, to a great extent, yet by public opinion we do not necessarily mean the opinion of the cultivated, and the great humanity to whom anything outside the immediate necessities of daily life never appeals; but there is a public which for us may include the painter, the sculptor, the poet, and the writer of contemporary history, and whosoever may be concerned in the intellectual or æsthetic development of the times.

Each individual worker may assist in elevating the position of photographic art, but the effect is infinitesimal as compared with the concerted effort of many exhibitors at one time; and this being so, the desirability of having an exhibition of photographic pictures wherein every contribution shall possess peculiar and individual merit, which shall constitute a reason for its being exposed to public view, and be in itself a testimony of the higher possibilities, well be at once apparent.

Hitherto this aspect of the circumstances has not been duly recognised, and our chief exhibition, possessing as it does the prestige and dignity of a national institution, has been open to all who shall pay a trifling entrance fee; good and bad, without selection, are accepted; without discrimination, all are hung and exhibited to an ignorant public who have no choice but to view the whole as representative of the best that present-day photographers can do. Was there ever a parallel to such a picture exhibition? What must be the inevitable result? What but that for every photograph of real merit there are twenty which are indifferent or even bad, and the impression which the few good things have upon the visitor's mind is overwhelmed and obliterated by the impression produced by the innumerable inferior works? Little wonder that the general and popular notion of photography is so erroneous and misled.

Elsewhere than in London this unsatisfactory condition of affairs has been already appreciated, and to some extent has been met. The help of known and successful photographers has been asked, and exhibitions of what might be regarded as the best and most modern of photographic picture work have been held; but in this country, where admittedly artistic photography has been carried to its greatest height, no such just and intelligent means of educating public opinion and advancing the new art has been afforded us, and it has been left to a private club to take the initiative. This year the London Camera Club has decided to devote its room to the purpose of exhibiting a limited collection of carefully selected works of known photographers. All honour and thanks to the Camera Club for this first step in the right direction, and especially to those men in whom the idea originated. But it is not enough. An exhibition held within the premises of a private club must, be it ever so "open" in character, have a limited application, and can only touch a restricted circle; but it is a step in the right direction, and one which, surely enough, will not be without a following, and probably ere photography is a year older the combined action of the many who have long felt the imperative need of reform will result in the organisation of some such exhibition in London as Vienna and Brussels have already attempted before us.

We say this in no spirit of prophesy, for no one who has watched the progress of things, who has, so to speak, felt the



No. 4a.] "WAITING AT THE LOCK." [*W. Wilcox.*

pulse and taken the temperature of the photographic community, can mistake the signs of approaching change. This chord Mr. H. P. Robinson has already struck with a powerful hand in the *Photographic News* of August 19th, and he pleads for separate exhibitions for the art workers, where artists shall be judged by art experts. This no doubt is what is required, but such an exhibition would fail in attaining any real good if it be not

rigidly selective. When such a course is adopted, and the mere fact of being accepted becomes to be regarded in itself an honour and distinction, will the troublesome and long vexed question of medal awarding find of itself a clear solution.

But if all this prominence be given to art photography, we hear it said, what about the technology and science to which the artists owe their materials and processes?



"NEWHAVEN FISHWIVES."
Taken by Mr F. W. Hindley in Fallowfield's "Mall" Hand Camera.

We have said the foregoing, not with any desire to depreciate the importance of scientific enterprise and research, but from a desire to secure just recognition of the artistic possibilities of photography. There is no need to champion its scientific accomplishments, its wonderful mechanical progress, or its adaptation to commercial and industrial ends. All this is proverbial, and is so well recognised as to have absorbed attention to the neglect of its other interests.

Let the prejudice of the intelligent public, as regards artistic photography, be once shaken and the old ideas overthrown, and photography in incompetent hands will no longer be tolerated, but good photography will go forward and, judged fairly on its own merits, need fear nothing.

Then each photographer will be compelled to show real merit in all he does, or give up the camera, except as a plaything, and each photographic picture must exhibit some worth to justify its existence outside the privacy of its author's work-room.

There is hope in the near future, and a recognition and reward which may make it worth while devoting time and labour to an art which has too long stood without the threshold waiting admission.

York.—On 6th inst. the Secretary exhibited and explained the working of a shuttle hand-camera kindly sent by Messrs. Houghton and Son. The ingenuity and simplicity of the mechanism for changing the plates drew forth many admiring comments. Messrs. Beck had also sent a "Eynoe" printing frame for inspection. Several members gave their experience of the Paget Prize plates and Eastman's Solio paper distributed at the last meeting, the opinions expressed being very favourable. The Secretary had on view a large number of prints, the result of his season's work, comprising views of York and its minster, Scarboro', Forge Valley, Hayburn Wyke, Bridlington, Bolton Percy, etc. He had used Castle plates for most of the negatives, and the prints were on Eastman's Solio, Jacoby's collodion, and Ilford P.O.P. Messrs. Hick and Dickinson had some capital enlargements, and Messrs. Vincent and Bainbridge prints.

To Arcadia with a Camera.

By Lieut. G. Harvey.

Thirty-six and a half miles from London Bridge (L. B. and S. C. Railway) lies Horsted Keynes, a place of singular beauty, and exceeding interest to the man of art—a veritable Arcadia, as yet quite unknown and unfrequented by the artist or photographer. As a matter of fact the natives eyed my camera with evident suspicion, doubtless taking it for an infernal machine, and myself for a dynamiter.

There are some of the most lovely spots imaginable in this neighbourhood, and I strongly advise all those who are in any way anxious to secure charming negatives to pay Horsted Keynes a visit. The village is two miles from the station down some pretty lanes (be sure to enquire the way from the station master), and after a walk of a mile or so, one approaches a fairish hill with some beautiful and picturesque old cottages on the left-hand of the summit; on the right, woodstacks. Expose a plate here. Reaching the village green, the eye is pleased with the charming prospect, and another plate may be advantageously exposed. Note the magnificent view on the left, with a glimpse here and there of shimmering water. Turn to the left, down a short but steep hill, and you will come to the church of St. Giles', a wonderful old structure. Give this three plates. (1) church and churchyard; (2) church and schoolhouse; (3) church, schoolhouse, and cottages. You will have to recede thirty paces or so for the latter.

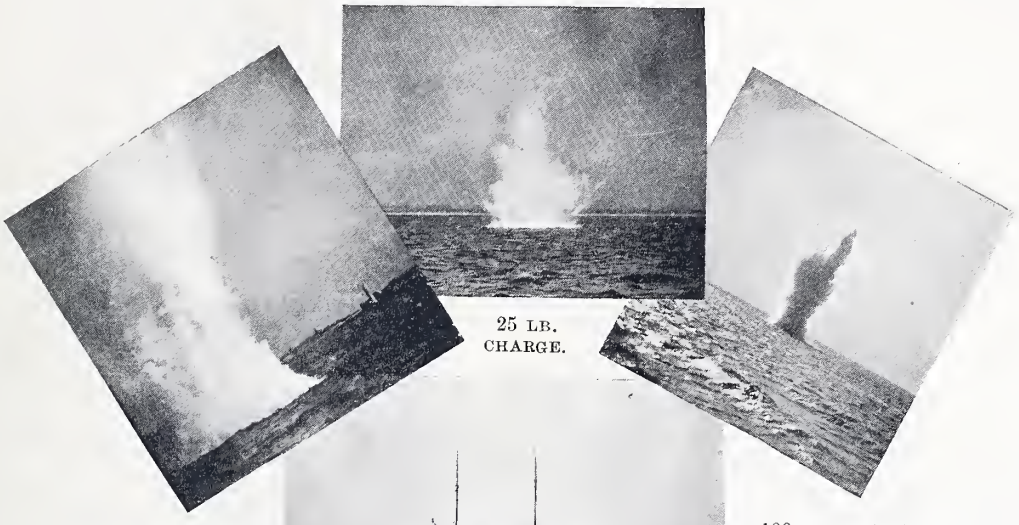
Enquire for the following, and give each a plate:—(1) Rectory and grounds; (2) the park; (3) the lakes; (4) Mr. Hoadley's farm; the spinney and rabbit warren. I could mention many other spots, but refrain, as weight of plates may be objected to. One could take two dozen plates with him, and then cry for more. Two more tips in conclusion. Firstly, on the right-hand side of the green you will find an inn at which you can get a good old-fashioned tea with everything fresh, at a trifle not worth mentioning—you will also get civility, and the landlady will darken a room for you with pleasure. Take your folding ruby with you. I was treated with much courtesy, and the good hostess drove me back to the station in the evening, refusing my offer of payment. Show her this paper and your reception will be a royal one. Secondly, the sexton will prove an invaluable aid in any manner. He is most obliging and wants nothing for it. His cottage is the first on the left-hand side as you approach the church. One cannot mistake it, as there are only three there.



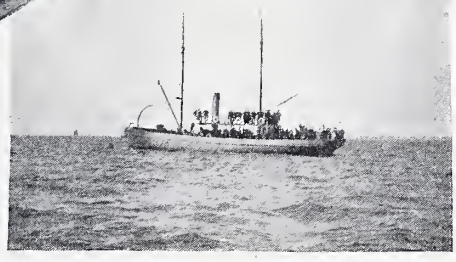
Miss Catherine Weed Barnes smiles on the operator, Mr. F. W. Hindley.

Submarine Mining and Volunteer Submarine Miners.

Mr. Paul Lange, of Liverpool, the well-known Norwegian and Icelandic traveller, has to a previous volume contributed specimens of his photographs of submarine explosions; and the following account, with illustrations, of his latest work in this direction will be of interest.



50 lb. charge. 25 lb. charge. 100 lb charge.



S.S. "Lord Heathfield."

The "submarine mine" differs from the "torpedo," inasmuch as the former is stationary and defensive, while the latter is locomotive and offensive. The submarine mine is submerged and anchored in a given channel or estuary, and is so placed to impede the progress of a hostile vessel. The torpedo, on the contrary, is launched overboard and hurled against the enemy's ship. The former is in charge of the Royal Engineers, the latter under the charge of the Royal Navy.

A submarine mine is a metal case, pear-shaped, drum-shaped, or spherical in pattern, according to circumstances (the first-named is now almost obsolete), containing explosives, and fitted with an apparatus for bringing about an explosion at will. For purposes of defence it is laid in a channel through which an enemy's vessel may attempt to pass. It requires an electrical cable connection with the shore, and it is this cable which is a chief source of expense in submarine mining work. In the mine there is a fixed apparatus consisting practically of a short length of fine wire surrounded by a detonating composition. The cable connecting the mine with the electrical batteries on shore places the wire in circuit, the various parts being so proportioned that when a certain current is transmitted, the wire is sufficiently heated to detonate the surrounding composition and fire the mine.

Submarine miners are required to learn how to load a mine, place it in position, and work the whole apparatus generally for firing, so that the explosion can be effected at any moment by the officer in charge of the "Test Room" in the fort on shore.

The War Office authorities have paid our volunteer engineers the compliment of entrusting to a very large extent the defence of our commercial ports to volunteer submarine miners, whose officers cheerfully undertake the arduous but interesting duties connected with their work, and it is one of the conditions of their service that they attend the School of Military Engineering at Chatham, and prove before the instructors of submarine mining their knowledge and qualifications in the technical detail of this branch of the work of Royal Engineers.

There are now volunteer divisions of submarine miners on the Tay, the Tees, the Tyne, the Clyde, the Mersey, the Severn, the Forth, and Falmouth, each divisin being under the command of a major, and subject to the same conditions of service, the most prominent feature being the compulsory annual training of fifteen days.

The Mersey Volunteer Division, Submarine Miners, Royal Engineers, to give them their "Army List" designation, under the command of Major A. H. Knight, have quite recently completed their fifth annual training. The corps was raised early in the year 1888 by Major Robert Montgomery, now the Honorary Lieutenant-Colonel Commandant of the division.

The officers set apart one afternoon during their training in order to explode some submarine mines and extemporised charges, for the purpose of demonstrating the utility of the submarine mine as a means of defence. In addition to Major-General Hall, commanding the North-Western District, and his staff from Chester, members of the Press, and many gentlemen, merchants, shipowners, bankers, underwriters, and those interested in shipping circles in Liverpool, were invited on board the *Lord Heathfield*, the steam miner on the Mersey station, to witness the demonstration.

Mr. Paul Lange, of Liverpool, was invited to be of the party, so that he might reproduce by photography the effect of the explosions.

His pictures have been very successful, and are much appreciated by the officers of the corps, as also by the commanding Royal Engineer, North-Western District, and by the Inspector of Submarine Mining Defences, War Office, Whitehall, both of whom have expressed their appreciation of Mr. Paul Lange's work.

The "Frena" Hand-Camera.

Messrs. R. and J. Beck, of 68, Cornhill, London, E.C., have placed upon the market an extremely ingenious hand-camera for use with cut films.

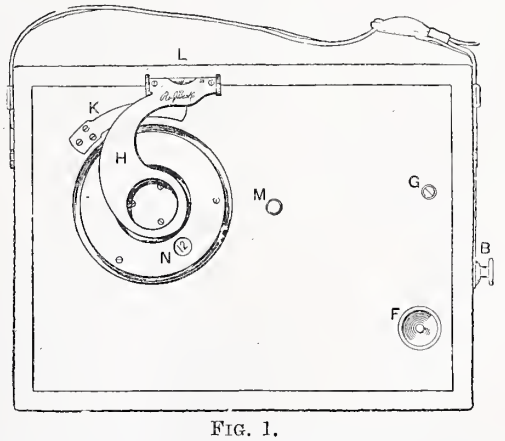


Fig. 1.

The external appearance of the camera, which measures 8 by 6 by 4½ in., is shown in fig. 1, and it is neatly covered with black morocco leather. The camera is arranged for cut films, which are contained in

a box at the back of the camera. The films, which, by the bye, are Edwards's special instantaneous isochromatic flat films, can be bought in packets of twenty, price 2s. 6d. To fill the box, a dummy card is

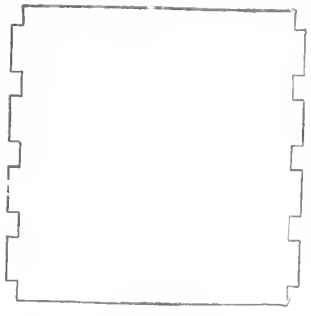


FIG. 2.

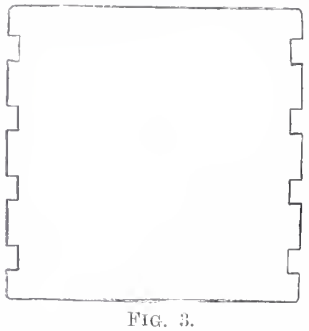


FIG. 3.

first placed in the box, then the packet of films laid on top. The films are notched, as shown in fig. 2. Between each film is a piece of cardboard also notched, but alternately with the film; this card forms a protecting mask and prevents light from having access to more than one film. On the top of the packet of films—and any number up to forty can be placed in the box—is placed a spring, and the box closed (fig. 4). The back of the camera being closed and the strap fastened up, we are ready for setting the shutter, which is an aluminium plate working in front of the lens, which is of special construction, working at fixed aperture and fixed focus of 13ft. To set the shutter the cover plate of the lens is swung on one side and one or two turns of the milled head, as shown in fig. 5, sets the shutter, which works from $\frac{1}{60}$ to $\frac{1}{5}$ sec. and time, the varying speeds being obtained by contraction of the aperture of the moving plate by means of the little pimples shown on the plate. The resetting of shutter does not uncap the lens, and it is set free by the little pin shown in the lower corner of the camera (fig. 5), whilst the pin level with the finder is used for time exposures.



FIG. 4.

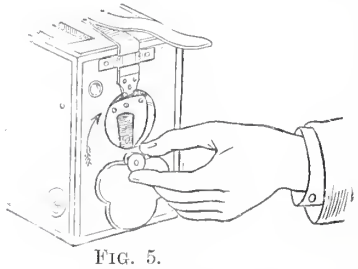


FIG. 5.

Having fired off, to change the film it is only necessary to release the register spring and turn the handle, in the direction of the hands of a clock, nearly right round, as shown in fig. 6, and then back again, the exposed film being thus dropped into a well, and the new film being ready for exposure. The interior fitting of the camera and the movement of the box is also seen in fig. 7.

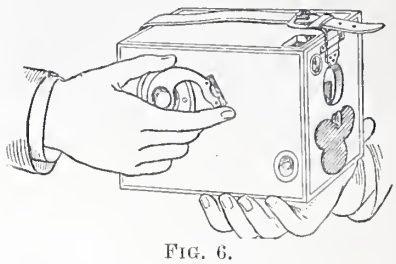
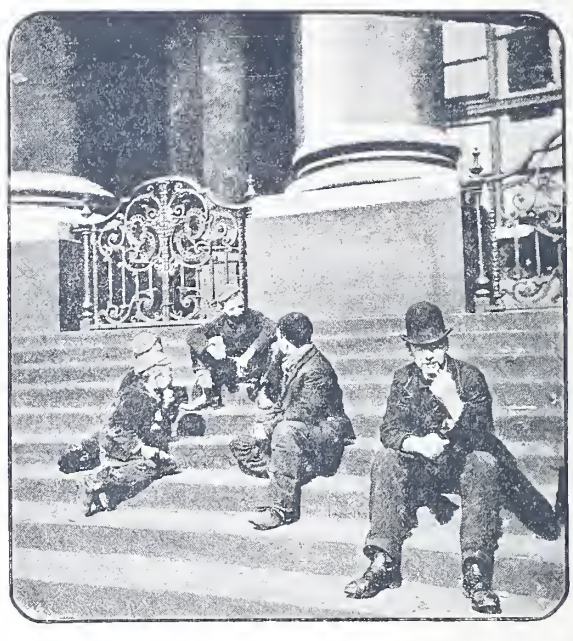


FIG. 6.

The camera is fitted with a well-sunk and properly adjusted finder. The focus of the lens is $4\frac{1}{4}$ in.; aperture *f*/11, and the size of the picture 3 by $3\frac{1}{4}$ in.

One special feature about the camera is that the box containing the films may be swung axially with the lens, and thus drunken architecture be avoided. We present our readers with two blocks illustrative of the work done by this camera, and we have used it nearly every day for the last week, and performed the operation of changing without the slightest hitch. Speaking from our experience, the lens covers very sharply, and the camera is one which deserves the attention of every lanternist and enlarger. It is a triumph of ingenuity and simplicity, and we cannot see how it is possible to make a miss shot with it.



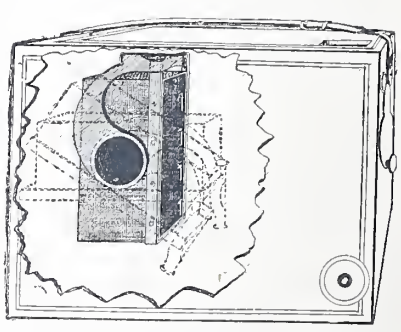


FIG. 7.

Tooting Camera Club.—On the 8th inst.—lantern night—slides of English, Scottish, and Continental scenery were shown by means of the President's new limelight lantern to a large number of members and friends. By the kindness of the Paget Prize Plate Co., sample packets of their plates were distributed to the members for trial, a framed enlargement of instantaneous pictures taken on their plates was also sent for the club room.

How to Make a Set of Photographic Apparatus.

By H. J.

(*Continued from page* 175.)

Chapter VI.

THE HAND-CAMERA.

To possess a hand-camera—or, as it is often called, a detective camera, is, I think, the ambition of every amateur; but, unfortunately, it is an ambition not always realised, for though they can be bought at any price from five shillings upwards, too many of the cheaper ones are worse than useless and cause the user to throw them aside in disgust, and many of the more expensive ones are complicated affairs which are apt to go wrong at the least provocation, so that it is extremely difficult for an amateur to choose the best for his purpose. It has often been stated by many of the best known workers, that what is needed in a hand-camera is a sure and certain method of changing plates; arrangements so that any number can be carried, and not to be confined to a dozen or so; finders for both vertical and horizontal way of plate, adjustable focus, rising front, and swing back; and also to be adapted to use on stand if required, and focussed in the usual way on ground-glass.

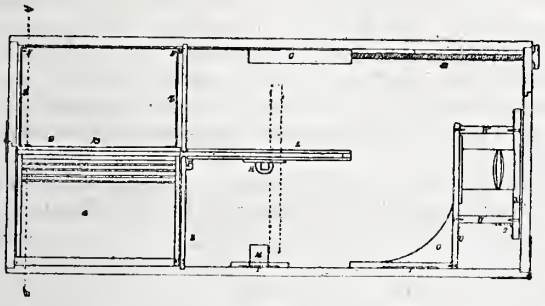


Fig. 47.

All these necessary arrangements are embodied in the camera which is the subject of this chapter, and it will necessarily follow that as viewed on paper it looks rather complicated; but if my directions are followed out to the letter it will be found to come quite easy, and all seeming complications will vanish as we go along, and as, in an instrument of this description, the time occupied in making is the largest item in the cost, all who make this one will possess as good a camera as can be bought, which will not cost them above one sixth what it would have done if purchased complete, and will have the additional satisfaction of being able to show it as their own work.

Before commencing the making of the camera, perhaps it will be as well if I describe the different drawings, and the method of working the parts, so as to make myself better understood afterwards.

Fig. 47 is a longitudinal section of camera complete. The plates are contained in a plate-box, A, which is divided into divisions the right thickness for one plate to slide in easily. I have only shown four divisions, for the sake of clearness. Fig. 51 is a sketch of the plate-box itself, with the lid partly drawn. It will be seen that on the top of the box are two pieces marked B B, with a groove in them; these also show in fig. 48 and one of them in fig. 47, being marked B in each place. In fig. 48 is shown the piece which fits in the groove marked C, and this piece again is screwed to the piece D, figs. 47 and 48. This piece is of the same size as the plate-box is outside. To this last piece D are fixed four tapes, one at each corner, E E, figs. 47 and 48. These tapes pass up over the small brass rollers F, and are connected with the block G. This block is connected with the screw H, the head of which is on front of camera, and on turning which the plate-box will be raised or lowered as is required.

Now as the plate-box only holds a dozen plates, it is necessary that we should have some arrangements so that when they are exposed they can be removed, and unexposed plates inserted in their place; this is effected by means of the sliding lid which, on looking at fig. 51, will be seen to open downwards and also to have a piece fixed on the bottom (I). This piece has two small holes in it as shown, and in the partition of camera K, fig. 47, are inserted two screws, projecting through the partition about an eighth of an inch. Now on the plate-box being placed in camera, the holes in I will be filled by the screws in K, and on the box being raised by means of the screw H, the lid will be held still and the box will be opened; and after all the plates are exposed, and the box lowered the lid will close again, and the whole can be removed and another box full substituted.

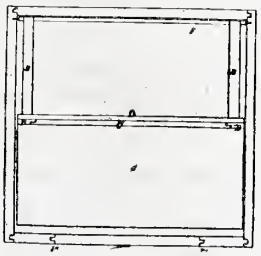


Fig. 48.

We must now look at fig. 47 again in order to show how the plates are to be exposed. This is done by means of the swinging frame L, fig. 47, which swings back as shown, so as to be opposite the slot in K, and the plate opposite the slot on the other side (in the plate-box) slides into it; it is then swung into a vertical position as shown by dotted lines, the slip M forming a stop for the frame.

The effect of a swing back is given by making M to slide along the bottom of camera either way by means of a lever, which I shall describe hereafter.



Fig. 49.

After the plate is exposed it is returned to its original place in plate-box, and the screw turned so as to bring the next one opposite the slot. A slip of paper with numbers on it is pasted on G, which can be seen through slot N, fig. 50, in top of camera, so as to keep a record of the plates exposed.

The lens is fixed as shown at O, and is focussed by means of a lever at the side, which I shall explain in the proper place, and is also made to rise and fall by means of racks and pinion. The front opens for adjustment of stops of lens, and the back for the insertion and removal of plate-boxes.

I will now show how the camera can be used on a tripod, with ground-glass for focussing. The glass can always be carried in the camera underneath the plate-box, the latter being made so as to allow room for it, or better still, a piece can always be placed in bottom groove of plate-box; the latter must then be drawn up so that the glass will slide into exposing frame, which being turned up in its place will show the view on it at once, no focussing cloth being required. When the correct focus is obtained, the ground glass must be replaced and the box lowered to the next groove, when the exposure can be made in the usual way, either with shutter or time.

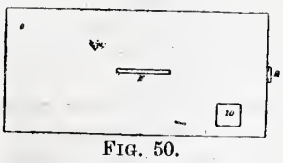


Fig. 50.

Having got through this rather long introduction, I will now get on with the instructions for making, and I must again ask all to follow the directions carefully, making each separate part as stated here, as if done otherwise some parts will be found not to fit in their proper places, and

this will of course cause failure. The first part to make is the plate-box, fig. 51; for this, prepare a piece of mahogany an eighth of an inch thick (the three-ply fret wood is very good for this), 15 in. long and $3\frac{1}{2}$ in. wide, and run a sixteenth of an inch groove on one side, an eighth of an inch from the edge, now cut off two pieces $2\frac{1}{4}$ in. long (cutting them square) and the remaining length cut in the middle. In these two longer pieces cut a trench at each end, leaving a space of $4\frac{3}{8}$ in. between the trenches, which must be the right size to take the ends of the two short pieces; now plane off the edge where the groove is, in *one* long piece, into the inside of groove, and then fix the short pieces into the trenches with glue and very fine screws, keeping the grooves together so that the lid will slide in. When the glue is set, plane off the back level all round (the back is the part farthest away from the grooves), and glue and screw a piece of the same kind of wood on, using plenty of screws, and keeping the box exactly square. While the glue is setting prepare some pieces for the divisions; these can be as thin as you like, and if you care to go to the expense, ebonite is very good for them, though wood will do. They must be made $4\frac{3}{8}$ in. long by $3\frac{1}{4}$ in. wide, as this size will just fill the box lengthwise, and will reach nearly to the grooves in width. We shall also want some pieces to go between the divisions; these must be a sixteenth of an inch thick, and the same size the other way as the thickest negative you can find is thick, and must be cut off in lengths of $3\frac{1}{4}$ in.

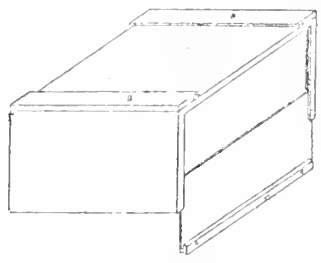


FIG. 51.

Now take the plate-box, and laying it on its bottom with the open side towards you, glue one of the small strips in each bottom corner—see fig. 53—then place a division on the two pieces, then two more strips and another division, until the box is full. They can all be put in at one time, rubbing the strips well into the corners; and do not leave any glue in the grooves, or it will interfere with the plates sliding in and out. When the glue is set, the box can be cleaned off outside, and the lid made; this would also be made of ebonite by preference, and the strip I glued and screwed on it. Make it a good fit, so that it will slide easily in and out, but not so loose as to drop out by itself. Now make the two strips B B, fig. 51, and screw them on level with outside of box, *at the top* as shown, and the plate box can be considered finished.

It may be thought that grooving would do for the box, and thus do away with the necessity for divisions; but my reason for using the latter is, if by any chance a ray of light enters, the whole lot of plates would be affected in the former case, but in the latter it would affect one only. Of course, if the plates were in sheaths it would be different; but I prefer to do without sheaths, both on the score of cost and convenience, not to say anything about extra weight.

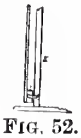


FIG. 52.

The camera itself can now be made, and no better wood will be found than mahogany, or if it is to be covered with leather or cloth, then American white wood is very suitable; $\frac{1}{4}$ in. will be thick enough, as lightness is a necessary condition. The full size for a lens of five-inch focus will be 11 in. long, by 5 in. deep, outside. The width of course is given by the plate-box, which was my reason for making that first. The two sides and top of camera are each in one piece, but the bottom is made up of three pieces, as shown in fig. 48. The bottom had better be prepared first so that the whole can be set out together; therefore take a piece of wood about 12 in. long and 6 in. wide, and cut a piece an inch wide off each edge, joint these pieces on again and match them together with tongue and groove joints as shown at P, fig. 48; then cut the middle piece asunder $4\frac{1}{2}$ in. from one end, and joint the two ends together with tongue and groove in the same way. The two outside narrow pieces can then be glued on to the longer of the two middle pieces, leaving the shorter (the $4\frac{1}{2}$ in. piece) loose, to form a sliding door in the bottom; this is for a purpose to be explained later on. The two sides can now be taken to about 5 in. in width (it does not matter to a trifle, so that they are both just alike), and a groove run with the match plane along the sides at each edge, and the top and bottom must also be taken to the proper width, and a tongue run on the edges, as shown in fig. 48; then put the four pieces together temporarily and try the plate-box; if it just goes in easily it will do, but if there is more than a sixteenth of an inch side-play, take another shaving or two off the top and bottom, as the closer it works the better, so as it is not too tight.

The sides and top and bottom must now be squared off to 11 in. long (or longer or shorter according to the focus of your lens), and rabbets cut all round inside to take the ends, as shown at each corner in fig. 47. In marking the bottom off to the length, the joint of sliding lid must be 4 in. from one end, letting the distance from the other end come as it will; this is important, as will be seen later on. A trench can now be cut in the sides and also in top and bottom for the division K. That in the bottom will be formed where the end of lid comes, the joint forming one side of trench, and the trench itself cut on the extreme end of lid; and the others, of course, will be cut at the same distance from the end, so that when put together the trench will continue all round.

The division itself can be made next, and must be built up of three pieces in the same way as the bottom, as it is necessary that the middle part *below the slot* be made to slide downwards, when the lid in bottom is opened slightly, otherwise the image on ground-glass could not be seen when focussing. As this part is made exactly as the bottom, I have no need to go over the same ground again, so I will only mention that the slot through which the plates pass into swinging frame must be exactly in the centre, and runs from side to side, *not* from top to bottom. The width, or perhaps I should say the length of slot must be $4\frac{1}{4}$ in. full, so as to leave room for plate to pass easily, and the same distance across as the divisions are between in plate-box. The edges of slot can also be rounded off slightly, so that they cannot scratch the film of plate. Now take the two sides again and run a groove in each along near the top edge, leaving about a quarter of an inch clear between them and those already run; but do not run them through from end to end, only from front end to the trench in which division K is to fit; these grooves are for the block G to slide in. The camera can now be put together for good, using both glue and screws, and placing K in its place, as it cannot be put in after. But before putting it in cut out two small slots at the top for the tapes to pass through, and as you are putting the case together, the rollers over which the tapes pass must be placed in their respective places; these are lengths of brass wire with a hole through the centre, and nothing is better for them to run on than a common knitting needle cut to the right length to enter each side about an eighth of an inch, and passing quite through the rollers. They should be placed as near the top as possible, so that there is room for the tapes to work without rubbing.

The block G must be made next. The size will be such as to slide in the grooves mentioned above, and about three inches wide, and the thickness will be the same as the brass

nut of screw H, which must be fixed in front side of it, and a hole made through the block for the screw to pass through. The four tapes (which will do of any ordinary good tape) can now be fixed to the opposite side of block to where the nut of screw is fixed. They will be fixed, two at each end, one top of the other; then pass them through the slots in K, and over the rollers, the bottom tapes over the roller close to K, and continuing the other two on, and passing them over the other roller. Then slide G in its grooves, as far back towards K as the length of screw will allow it to go, then draw out lid in bottom of camera, and turning the whole over, fix ends of tapes between C and D (fig. 47) by screwing the two pieces together; this will hold them firmly, and they can be easily adjusted at any time. The plate-box should now be put in its place, and the block G pulled to and fro to ascertain if the tapes are the proper length; if so, they should raise the box smoothly and easily from top to bottom of camera, without any rubbing or friction, and if they do not it is most likely owing to one or more of the tapes being slightly longer or shorter than the others, which had better be put right at once, as the box must hang level or the plates will not enter the slot in K. I will now postpone the finishing of the camera to the next chapter, but I give below the list of fittings required, so that they may be obtained before commencing work, which, as I have said before, is by far the better way.

	s.	d.
Milled head screw H	3	0
* 2 pair hinges (for front and back lids) ..	0	9
2 brass rollers for tapes	1	0
* Fittings complete for swinging frame L ..	1	0
* Racks and pinion for rising front	3	3
* 2 brass levers for focussing and swing back ..	1	0
* Spring and eye for shutter	0	6
* Spring catch for front lid, and lock for back lid	2	0
Divisions and lid for plate-box, ebonite, $\frac{1}{16}$ in. thick, each	0	$1\frac{1}{2}$
* Plates, hinge and turn-button, Z, a, b, and 1, fig. 49	1	0

Those marked thus * have to be described in chapter VII.

DESCRIPTION OF FIGURES (CHAP. VI.)

Fig. 47. Longitudinal section of camera, complete.
„ 48. Cross section of camera on line A. B.
„ 49. Right-hand side of camera from the back.
„ 50. Top of camera.
„ 51. Plate-box, showing lid partly drawn.
„ 52. Detail showing method of opening lid when in camera.

DESCRIPTION OF REFERENCE LETTERS.

A. Plate-box in position.
B. Grooved strips to connect plate-box with tapes.
C. Centre-piece fitting between B B.
D. Connection between tapes and C.
E. Tapes for raising and lowering A.
F. Rollers over which tapes pass.
G. Block connected with screw.
H. Milled-head screw to work plate-box.
I. Strip to open lid of plate-box.
K. Division of camera.
L. Exposing frame.
M. Stop for exposing frame, also forming swing back.
N. Slot in top of camera to register plates.
O. Strengthening piece to front.
P. Stop for exposing chamber when in horizontal position.
P′ Method of forming sliding-door in bottom of camera.
R. Bearing of exposing chamber.
S. Handle of exposing chamber outside of camera.
T. Levers working swing back, and sliding front.
U. Guides for rising and falling front.
W. Pieces to carry shutter.
X. Frame of shutter.
Z. Sliding plate carrying arrangement for setting and releasing shutter.
a. Plates for Z to slide in.
b. Trigger to release shutter.
1. Hinge for setting shutter.
2. Method of hinging shutter when lens is fitted with movable stops.

(To be continued.)

Some Notes on Enamelling Gelatino-chloride Prints.

By W. Pitcairn Craig.

Nearly all photographic papers are capable, more or less, of being finished with a very brilliant surface by the comparatively simple process of drying in optical contact with glass; but gelatino-chloride papers—Obernetter, Aristotype, Solio P.O.P., etc.—lend themselves *par excellence* to this method of finishing.

The failures which many amateurs experience being due principally to want of patience and want of strict attention to details, I will, as shortly as possible, describe the whole process, from the preparation of the glass to the final mounting—not deeming the minutest details unworthy of notice.

Well, first let us prepare the glass. Most of us have, unhappily, at least *a few* spoiled negatives which, if we can remove the old films, will serve our purpose excellently. This is done by soaking the negatives for a short time in a mixture of one part of hydrochloric or sulphuric acid to twenty parts of water; the film will then, if it is not varnished, peel off at once; but if varnished, its removal is more troublesome, as it has first to be soaked in methylated spirit of wine, to remove the varnish, on which the acid has little or no effect. Well, the film having come off satisfactorily, the glass should be first thoroughly washed in hot water, a hard nail-brush being used to remove any remains of the film; then rinsed through cold water, after which it must be carefully dried and polished. A little powdered French chalk should now be dusted over it and gently rubbed off with a soft linen cloth till all traces of the chalk have disappeared. It is sometimes recommended to first treat the glass with a solution of benzine and beeswax, but this seems to me quite unnecessary, besides which, it is very difficult to prevent the benzine leaving streaks on the finished print which by no means enhance its beauty.

Now, the glass being ready, the print is taken from the water and laid face downwards on the prepared side of the plate; a piece of sheet rubber, rather larger than the print, is laid on the back, and the squeegee passed firmly but gently over it, expelling all air-bubbles and moisture, being careful not to crease the print, which will then adhere firmly to the glass. If it is not wished to mount the enamelled print, there is no more to be done beyond allowing it to dry; but if it is to be subsequently mounted, it will be necessary to paste, on the back, while the print is still on the glass and wet, a piece of waterproof backing paper—such as that sold by Wheeler and others—as, if it were pasted directly on to the mount when dry, the moisture would penetrate the paper and ruin the glazed surface. A very good way of preparing the starch with which to execute this preliminary mounting is this:—"Break" one part of Colman's hot-water starch with two parts of cold water; when all lumps have disappeared, add other four parts of water and stir well, place in a clean pan and heat, stirring continuously, till it thickens and turns blue. A small quantity of this, avoiding the skin, is applied, when cool, to the back of the print with the ball of the middle finger, by which it is possible more thoroughly to remove lumps and superfluous starch than with a brush. Place a piece of backing paper on the print and carefully squeegee down, expressing as much of the starch as possible. The print, attached to the glass, is then laid apart in a warm room to dry, an operation which occupies *at least* four hours; in a dry, warm atmosphere one is pretty safe in stripping the print in about six hours. To do this, as the starch will have attached the edge of the waterproof paper to the glass, it will be necessary to cut with a sharp-pointed knife and a straight-edge round the print, taking off the superfluous backing paper and as narrow a strip as possible of the print, being careful to cut right through to the glass.

On raising one of the corners, the print will now peel off with as brilliant a surface as anyone could desire, and, it must be remembered, one that is very easily injured. Now we have yet to attach it to the mount proper; the usual way to do this is to apply starch as for an ordinary print, but I have found, after a good deal of experience, that this has always an injurious effect on the polished surface, and I consider the following method much better. Run round the edge of the backing paper a line about one-eighth of an inch wide of Le Page's liquid glue, using as small a quantity as possible and being careful that no glue reaches the polished surface; unless the bottle be newly opened, it should be placed in hot water to thin the glue, thus allowing a small quantity to be used. Place the print on the mount and press into contact for a few seconds with a piece of clean glass.

Care should be exercised in the choice of mounts for enamelled photographs. Plate-sunk mounts are suitable, but perhaps the best are cut-out mounts, with which, of course, the glue is applied to the mount, not to the print. Although backing paper is not absolutely necessary when using cut-out mounts, yet it is advisable to use it, as it gives strength and rigidity to the photograph.

This method of finishing will often make a poor, flat-looking print quite presentable, and will sometimes bring out details not before visible and give a general sharpness to even a good photograph.

In conclusion, let it be remembered that prints may be enamelled over and over again; and if, after being stripped from the glass, the surface be found to be unsatisfactory, the operator should not hesitate to soak it in cold water—*hot* would bring off the film—till the backing paper comes off, and begin anew, keeping in mind the old adage, "What is worth doing at all is worth doing well."

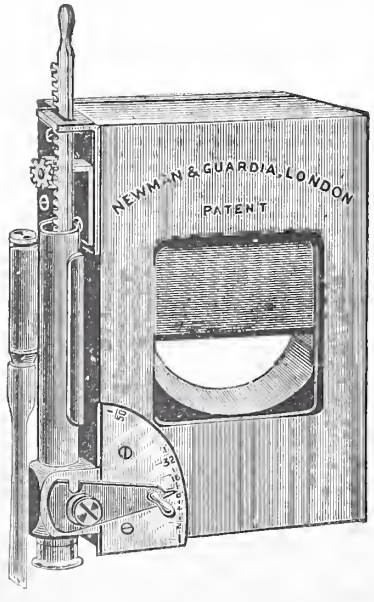
Apparatus.

THE PHOTO RUBBER STAMP.

MR. WM. TYLAR, of 57, High Street, Aston, Birmingham, has introduced a very striking novelty, namely, an indiarubber stamp which can be made from any print sent him. This will be found very useful in business as well as being a pleasing novelty, as the impression will take on any smooth surface, such as silk, leather, etc., in any colour.

WEBBER'S SENSITISED PAPER.

Mr. William Webber, of The Laurels, Kennington Avenue, Bristol, has sent us a sample of his ready-sensitised paper, which we have found to give rich brilliant prints, and tone easily with freedom from blisters.



THE "N. AND G." ALUMINIUM BLIND SHUTTER.

Messrs. Newman and Guardia, of 71, Farringdon Road, E.C., have introduced a new blind shutter, the principal parts of which are constructed of aluminium. It is fitted with Newman's patent automatic regulator, and it gives speeds varying from one second to one-fiftieth of a second, and time exposures. It can be fitted at the back, on the hood, or between the lenses, and has an air cushion to prevent vibration. One size only of 1½ in. diameter is ready at present, but other sizes will shortly be ready. The price is 45s.

Societies' Meetings.

Ashton.—On the 3rd inst. was held the last outing of the season. This time the rendezvous was Chester, and the outing was most enjoyable. The members of the society and their friends, to the number of about forty, including several ladies, assembled at Park Parade station at 6.45 on Saturday morning, and five minutes later were whirling away on the new M. S. and L. route *via* Central Station, Manchester, to the ancient city on the banks of the Dee. The party included Mr. G. H. Dean (secretary), Mr. C. E. Redfern, Mr. T. Glazebrook, Mr. R. T. Marsland, Mr. W. C. Brown, Mr. T. Cheyne, Mr. Percival, Mr. R. Matthews, Mr. J. Hutchison, Mr. W. Leigh, and Mr. W. Chadwick. Chester was reached about ten minutes past nine, and at the station the trippers were met by their leader, Dr. Hamilton, who had proceeded there on the previous day to make arrangements for the day's outing. The greater portion of the contingent wended their way to the famous Cathedral, where special permission had been obtained to photograph the interior. The early part of the forenoon was whiled away pleasantly until 12 o'clock, at which time all assembled on the river landing stage, awaiting the arrival of the steam launch, which Dr. Hamilton had specially chartered. Presently a trim little boat, "The Ontario," steamed up, and all being aboard away they went for a trip up the river. The first calling place was Eccleston Ferry, where Mr. Joseph Hutchison took a picture of the group on board, the plate being a 12in. by 10in. A "shot" was also taken of the party by Mr. Matthews. Then the party disembarked, and a pleasant hour was spent in photographing the beautiful river scenes which are to be found here in abundance. All being aboard again, a quick run brought them to Eaton Hall, the seat of the Duke of Westminster, where another halt was made, and the party landed in the private grounds. Special permission to do this had been obtained by Dr. Hamilton, and the privilege afforded the trippers a rare pleasure. For three hours they were seen roaming about the well-laid-out grounds. Some capital pictures were taken here. At five o'clock the launch again steamed off with all on deck, and by six Chester was reached. Home was reached about 10.30. The weather had been moderately fine during the day, the slight showers which descended in no way inconvenienced the party, and the outing was a thoroughly enjoyable one.

Burslem.—The first meeting of the winter session was held on 6th inst., Mr. E. B. Wain (President) in the chair. Large attendance of members, one new one being elected. A large number of prints from negatives taken during the last two months by members were exhibited and criticised by those present. Mr. F. C. Powell gave a very interesting paper on "Development," which was followed with considerable interest by those present. The reader thoroughly and concisely explained the use and composition of a developer, and gave a number of examples of various combinations, also touching upon some of the newer substances which have been introduced lately. The paper concluded with a number of useful hints on intensification, reduction, retouching, and varnishing of negatives. At the conclusion a hearty vote of thanks was passed to Mr. Powell. The society is in a more flourishing condition than at any previous period of its existence, the members generally displaying the utmost interest in its welfare, and in spite of the adverse criticisms industriously circulated by the so-called Potteries correspondent of a monthly contemporary, who evidently knows nothing of its working, the society is in anything but a languid state, unless a constantly increasing membership roll indicates that it is slowly fading out of existence.

Crewe.—A party of members and friends enjoyed a very pleasant and interesting outing to Cholmondeley Castle by waggonette on 10th inst. The weather all the week had been very dull and wet, anything but promising, yet it changed and proved a very fine sunlight summer day, just right for photography—light good, and foliage perfectly still. Through the kindness of Mrs. Gartside, the lady and family in residence, permission was given to freely ramble about the park, grounds, and gardens. On arriving at the Lodge-gate, the small army of cameraists and friends walked through the park, enjoying the fine sights of stately trees, herds of deers, swans, and wild ducks on the lake, and on to the very fine Castle of Cholmondeley, elevated on the hill, and beautifully surrounded by trees, walks, and charming pleasure grounds and water fountains. It was their extreme pleasure and delight to both see and enjoy the lovely paradise of trees, ferns, and walks finely laid out for beauty and taste. Special thanks are due for the privilege and boon, so richly appreciated by the Crewe friends, to Mrs. Gartside, and to Mr. Talbot Wilson for obtaining the request. All found ample scope for the camera, and doubtless many very fine views would be taken, After a good substantial tea provided by Mr. Dodd, postmaster at Cholmondeley, and a gentle walk round, the party returned home, having enjoyed a thoroughly good day.

Croydon.—A general meeting of the Photographic section of the Micro. and Nat. Hist. Club was held on the 9th inst., Mr. Carter in the

chair. In addressing the meeting, Mr. Carter said they were brought together that evening to discuss and receive the opinions and ideas from the members as to the arranging of the coming winter session. Mr. E. Lovett, the President of the club, who was present, but unable to take the chair owing to other business calling him away, intimated to the members that the Institution Committee had made them an offer of their committee-room, to be converted into a dark-room and meeting-room, in the place of the dark-room they now had, and which could not be used on account of being so damp. The idea was well received by those present, and Mr. Goode proposed, and Mr. Waller seconded, "That it was the opinion of the photographic section of the club that it would be a great boon if the committee-room could be hired for the purpose of a dark-room, to be always available for the use of members." The chairman then said that that proposition would be placed before the general committee of the club on Wednesday next to receive their consideration. The chairman then called attention to a new question box which the club now had, and hoped the members would avail themselves of it. Suggestions were then received from the members present for the coming winter meetings, and will be considered and arranged in due course by the photo sub-committee.

Derby.—The above society had one of their very enjoyable outings on the 10th inst., going to Melbourne, which, with its quaint old church and picturesque lake, offered good opportunities for camera work. Through the courtesy of Mr. Fane, his extensive grounds, laid out in Dutch style, with ancient yew tree hedges, were opened to the society, the light being excellent, some good views were obtained, and the return journey was made in the early evening. The society have as a guest Miss Catherine Weed Barnes, of New York, who has also been entertained by Messrs. Keene and Scotton, who accompanied her to Haddon Hall, Matlock Bath, and Wingfield Manor, and a number of exposures were made. The excursions have been much enjoyed, and it is to be regretted that they are so nearly at an end.

Devonport (R.N.E. College Photo Club).—At a recent meeting of the members the following were re-elected:—President, W. S. Hill, R.N.; Committee, H. M. Wall, R.N., J. S. Constable, R.N., F. J. Charlton, R.N., and W. B. Hall, R.N.; Hon. Sec. and Treasurer, G. W. Leslie, R.N.

East London —The members met on the 7th inst. at the "London Apprentice." The business done was the discussion of a light supper and presentation of a half-plate wide-angle R. R. lens, suitably inscribed, to the energetic Hon. Secretary. The President, in making the presentation, congratulated Mr. Wilkinson on the efficient and courteous manner in which he had carried out his arduous duties. Mr. C. Tylee (Vice-President) fully endorsed what had been said by the President, and proceeded to heap further encomiums on the head of the Hon. Secretary. The health of the Hon. Secretary was then drunk with musical honours. Mr. Wilkinson in his reply thanked the members for their gift, which was most acceptable, inasmuch as it completed an otherwise incomplete half-plate outfit.

Hackney.—On the 6th inst., Mr. A. Barker in the chair, several members complained of the inaccurate manner in which meetings had been reported during the absence of the Hon. Sec, and in consequence the minutes of the preceding meeting were ordered to be rewritten. Mr. S. J. Beckett, of 6, The Grove, Hackney, was nominated for membership, proposed by Mr. Sodeau, and seconded by Mr. Hensler. Donations:—A cabinet portrait of Mr. Harverson, taken by himself for the album, and six blue glasses for testing dark-room lights from Mr. Sodeau. Work was shown by Messrs. S. Beckett, Harverson, Hudson, Nunn, and Sodeau. Mr. Nunn showed the result of testing a ruby lamp with an Ilford red-label plate; it was pronounced safe. Mr. Hudson showed a negative and lantern slide developed with amidol; he was much pleased with this new developer, and had developed eight plates in succession with one portion of developer. Mr. Beckett did not think that amidol would be very suitable in cases of over-exposure, but thought that it would prove excellent in cases of under-exposure and for lantern slides, etc. Mr. Hudson had found that some sulphite of soda which had been exposed to air did not completely dissolve in water, and did not prevent stain to the same degree as the fresh substance. Mr. Sodeau said that this was due to its having been oxidised to sulphate. Mr. Gosling asked whether sulphite of soda and metabisulphite of potash would keep in solution. It was stated that they would keep if air be excluded; solutions of sulphite of soda should be acidified. A member had developed a lantern plate with pyro and sulphite of soda only; it was remarked that sulphite of soda is alkaline. A member asked whether pyro-soda could be used for developing more than once; several members did so, but others thought that it was not advisable, especially in case of under-exposure. Mr. Capell asked what effect citrate of soda had in developing; it was stated that it was very useful in cases of over-exposure, as it allowed the negative to gain in density while preventing detail from coming out.

Lewes.—The annual meeting was held on 6th inst., under the presidency of Mr. Tunks. Mr. Bedford, the Honorary Secretary, read the following report:—"There are at present forty members on the books, nine new ones have been elected during the year, and seven have resigned. Ten ordinary meetings have been held during the year, and have been fairly well attended. The excursions have been so badly attended that it is contemplated to discontinue them unless they receive better support. The Treasurer's report shows a balance in hand of £1 3s. 5d. It is with much regret that the Council have to mention the loss the society has suffered by the resignation of Mr. J. G. Braden, who has held the position of President since the formation of the society, he having left the town; also their regret at the loss of so energetic and a useful member as Mr. Percy Morris, who has likewise left the town, but they are pleased to know that both these gentlemen will continue as members of the society. Finally, the Council wish to thank the Press, local and otherwise, for their notices of meetings, excursions, and for kindly sending copies of their papers." The report was adopted, and on the motion of Mr. Wightman, seconded by Mr. Wells, Mr. Tunks was unanimously elected President. Mr. Wightman was appointed Vice-President. Mr. Constable was elected Honorary Secretary in the place of Mr. Bedford, who resigned the office, having found it impossible to give the amount of time required to carry out the duties, and Messrs. Funnell, Young, Carpenter, Bedford, and Curtis were elected on the Council. A vote of thanks was passed to the Paget Prize Plate Company for a framed enlargement of snap-shot pictures taken on their plates, and for the sample packets of plates sent by them, which were distributed to the members present for trial and report at a subsequent meeting. A new style of printing frame, the Bynoe, sent by R. and J. Beck was shown and generally considered to be a good thing. All communications for the society should now be addressed to the Secretary, Mr. H. B. Constable, 5, East Street, Lewes.

London and Provincial.—On 7th inst., Mr. Haddon in the chair. Mr. Haddon presented the Association with a copy of Burgess' "Argentic Gelatino Bromide Workers' Guide," one of the earliest manuals on dry-plate working, published by Morgan and Kidd. Mr. C. Goodwin Norton showed his registering templates, and a new device he had introduced for testing the flatness of field of lantern objectives. Mr. Parfitt showed Newman and Guardia's aluminium blind shutter and changing box. The following questions from the question-box were then answered:—How is the proper position of the stop in single lenses ascertained? Mr. Debenham said it was almost impossible to say. Grubb had made his stop adjustable so that it could be used to flatten the field if required by moving further out. Mr. Haddon suggested that it had been recommended to place it one-fifth to one-seventh of the equivalent focus in front. The second question was, What is the best method of treating developed plates when travelling, so that fixing may be postponed until at home? Mr. Haddon suggested well washing, but Mr. Debenham said all plates would not stand this. The general opinion was that if development could be effected, fixing could be done. A desultory discussion then ensued upon reversal, led off by Mr. Teape, but the subject was finally deferred to a future meeting.

North London.—On the 6th inst., Rev. E. Healy in the chair. This meeting, the first after the summer vacation, was devoted to reports of holiday work, and a good number of specimens of hand-camera work as well as of larger sizes occupied the attention of the members. It was noticeable that a considerable proportion had been taken on the Ilford and other Isochromatic plates, the results fairly showing the advantages of the colour correction. Almost without exception, the prints were on Ilford or Eastman printing-cut paper, toned under various conditions of bath, but in all cases with satisfactory results. Messrs. Beck's "Bynoe" printing-frame was shown, and attracted a good deal of interest, and the new developer "Amidol" was mentioned as to be reported on very shortly. Next meeting, September 20th, when a practice demonstration of retouching will be given by Mr. Redmond Barrett.

North Middlesex.—On the 12thinst., Mr. H. Smith in the chair, thirty-five members and a number of visitors were present. Mr. Beadle addressed the society on "Lantern-slide Making." He showed a frame for the purpose of printing by contact from any part of a half-plate negative made from a whole-plate printing frame. The ordinary back was removed and two thin boards substituted, the inner sides were covered with a soft material, and a square hole 3¼ by 3¼ cut in the centre of each. The negative was sandwiched between them, leaving the selected part visible through the opening, the whole arrangement being clamped together with the pressure springs. The lantern plate was dropped into the opening over the negative and secured in place by a lid fastened with one pressure spring. Mr. Beadle referred to the various lantern plates on the market, their peculiarities, and the tones to be obtained on them. He had long wished for a print-out plate, and had tried with success the following formula which he had recently seen:—(No. 1) Silver nitrate, ½oz.; citric acid, 60 gr.; water, 1 oz. (No. 2) Nelson's No. 1 gelatine, ¾ oz.; water, 6 oz. (No. 3) Alum

20 gr.; Rochelle salts, 20 gr.; ammonium chloride, 10 gr.; water, 1 oz. No. 2 was gently warmed and No. 3 added; No. 1 was then added drop by drop with constant stirring, heated up to 150 degrees, and filtered through two thicknesses of muslin, and the plates coated by pouring a pool in the centre and flowing all over. The only trouble he had met with was that it remained slightly tacky and would stain unvarnished negatives. Lantern-slides, large transparencies, and opal plates produced by this method were passed round for examination. The colours obtained by toning with the borax and cyanide baths were very fine, and though the plates had been repeatedly removed during printing for examination, no signs of doubled images were visible, as in replacing the plate care was taken to bring it into close contact with the same side and end of the printing frame. The lecturer then dealt with the minutiæ of exposure, development, and toning of slides made by gaslight, and ended by making one or two slides of great beauty. A hearty vote of thanks was accorded to Mr. Beadle for the seasonable lecture he had given. The competition of views taken at Welwyn and Hadley was held, Mr. Allpress being declared the winner. The next meeting will be held on Monday, the 26th inst., Mr. Mummery in the chair, when Mr. E. J. Wall will lecture on the "Life of a Dry Plate." Visitors welcome.

Richmond.—On 9th inst., the President in the chair. Referring to the soda developer mentioned in the minutes, the Chairman remarked that for some kinds of plates the amount of soda should be halved. For time exposures it was advisable to begin with even less than that amount. Mr. Faulkner inquired which was the best method: To obtain density first and detail after, as he had seen lately recommended, or *vice versa*. He preferred getting the detail first of all; with Rodinal he had been unable to obtain vigorous negatives. Mr. Ramsay had had no trouble on that score. Mr. Ennis could get better density with pyro-soda than with Rodinal. Mr. Davis wished to know why in a recent article carbonate of soda was recommended as the alkali for hydroquinone, instead of the usual hydrate. Mr. Faulkner said that development being slower a finer grain and a better negative would be the result. The discussion having turned on fixing, Mr. Cembrano expressed the belief that fading of silver prints was often due to insufficient fixation. For negative work a dirty hypo bath was often the cause of stained or yellow negatives. Mr. J. D. Gibson said that climatic conditions also affected the permanency of albumen prints. Photographs which he had made in Madras, where the climate was dry and hot, had faded, while others done at the same time and under same conditions which he had sent to England had stood the test of time well. His experience of the climate in Ceylon, which was damp and hot, was that it also caused prints to fade. He added that want of permanency was due as much to unsuitable mounts and mountants as to insufficient washing out of the hypo. A member having asked whether prints on gelatino-chloride paper required as much washing as albumen prints, Mr. Ardaseer replied that the former required more, the paper being thicker and the hypo penetrating more into the gelatine. The discussion fixed for the evening on "Improving Faulty Negatives" was opened by the Chairman, who said that there were a number of ways of improving faulty negatives, but that whenever possible he recommended taking another negative. Covering the back of the plate with collodion, containing some aniline dye, such as aurine, was an excellent plan; those parts covering the over-dense spots of the negative could be scraped away. Mineral or tissue paper were also often used in a similar manner. By means of a stump and blacklead used on them, the light could be retarded on some parts of the plate. Sometimes a negative could be greatly improved, especially if a very flat and thin one, by making a transparency from it, and from this a negative. By suitable exposure and development the contrast could be very much increased. Intensifying the negative was often resorted to by some workers, while others preferred getting great density by development, and then using a reducing agent. For platinotype Mr. Willis had found that by printing under signal-green glass the quality of the resulting print was much altered. It was eminently suitable for hard negatives, as printing under this glass gave much softer images. He (the Chairman) had obtained a piece of signal-green glass, but the colour appeared to him to be a peacock blue by daylight. Mr. Ardascer said that was so, but by gas or oil light the colour would show as green. If examined in the spectroscope it would be found to transmit nearly no other rays but the green. The Chairman then announced that the winter session of the club would begin on the 10th October, and that the nights of the meetings would be altered to Mondays at 8 o'clock, the chair being taken at 8.30 p.m. This change had been found necessary in order to secure the use of a larger room, the present one being inadequate, owing to the increased number of members.

Rotherham.—The monthly meeting was held on the 6th inst. Dr. F. B. J. Baldwin (President) in the chair. One new member was elected. The Bynoe printing-frame was introduced. The arrangement for holding the paper was much approved, but the question was asked as to the risk of the print moving in the larger sizes. Information had been received relative to the Hill-Norris collodion plate, which had made its appearance during the month. Particulars of several photographic specialities were laid before the members. The fourth excursion of the season was arranged to take place on Friday, September 16th. The destination is Wingfield Manor, Derbyshire. The remainder of the evening was taken up in a profitable consideration of "questions," of which there were a considerable number. One member desired information as to the yellowing of one of the chloride of silver emulsion papers, and it was thought that in the process of toning the addition of fresh gold to an almost exhausted bath might have brought about the degradation.

Sheffield.—The monthly meeting was held on the 6th inst., Mr. E. J. Chesterman in the chair, when, after the routine business of the meeting and the election of Messrs. Toplis and Harrop as auditors, the new rules were brought forward and thoroughly discussed and satisfactorily arranged, when fifteen members gave in their names to join, which was considered very good for a commencement, after which the Secretary laid upon the table for inspection a new printing-frame by Beck and Co.; also Mr. Crowder showed a neat contrivance to act as printing-frame in case of emergency. Several members gave very good reports of the Paget Prize plates handed round at the last meeting, showing negatives and prints from same. The date for the receipt of pictures for the annual competitions was postponed until November 14th. Mr. E. Beck opened the discussion on "Instantaneous Photography," which induced a deal of valuable information.

South London.—Ordinary meeting on the 3rd inst., Mr. Maurice Howell, one of the Vice-Presidents, in the chair. At the conclusion of the usual formal business, the President, Mr. F. W. Edwards, read a paper on the life and works of George Tinworth, the famous terra-cotta sculptor, illustrated by a fine collection of forty lantern slides, which was much appreciated by the members and friends (150) present. Many requests for the repetition of the lecture have already been received by the President, who has consented to do so, and to increase the number of illustrations to sixty. It was announced that the judging of the prints from negatives on Paget plates was deferred until the next meeting. The winter session will open with a cinderella dance on the 3rd proximo.

Wigan.—Annual meeting on 7th inst. Annual report and balance-sheet presented. The latter showed a small balance on the right side after paying all expenses. In the report thanks were expressed to the Editors of the AMATEUR PHOTOGRAPHER and *Photography* for the loan of their 1891 prize lantern slides, and also to the Editors of the AMATEUR PHOTOGRAPHER, the *Practical Photographer*, and *Photographic Work* for gratis copies of these papers. The following officers were elected for the ensuing year:—President, Mr. J. A. E. Lowe; Vice-Presidents, Rev. J. S. Barnes, M.A., Mr. R. Wardman, and Mr. G. R. Newman; other members of Council, Messrs. J. H. Atherton, J. Smith, Wm. Heaton, B. B. Hartley, S. Richardson, H. Hill, and Percy Clark; Hon. Secretary and Treasurer, Mr. Fred Betley, 11, Swinley Road, Wigan. A small Sub-Committee was appointed to look out for a more suitable place of meeting.

Woolwich Polytechnic.—The usual fortnightly meeting was held on 7th inst. After several photographic questions had been discussed, a demonstration of the "Cold Bath Platinotype Process" was given by Rev. E. J. Doherty. A number of lantern-slides and prints by members were handed round and much admired. Next meeting Wednesday, the 21st inst., at 8 o'clock. Subject, "Lantern-Slide Making."

SOCIETIES' FIXTURES.

Sept. 16.—LEWISHAM.—"A Trip to Norway with the Hand-Camera," Mr. W. C. Chaffey, sen.
„ 16.—RICHMOND.—Informal meeting.
„ 17.—PEOPLE'S PALACE.—Outing to Tower of London.
„ 17.—LEYTONSTONE.—Informal meeting.
„ 17.—EAST LONDON.—Excursion to Winchmore Hill.
„ 17.—CROYDON.—Excursion to Limpsfield, Pain's Hill, and Hurst Green.
„ 19.—LEEDS.—Review of the Summer's Work.
„ 19.—S. LONDON.—"Photography in Natural Colours," Mr. W Groves.
„ 20.—N. LONDON.—"Practicle Retouching," Redmond Barrett.
„ 20.—HACKNEY.—Ordinary meeting.
„ 23.—RICHMOND.—Informal meeting.
„ 23.—OXFORD.—Outing.
„ 24.—RICHMOND.—Excursion to Richmond and neighbourhood.
„ 24.—BRIGHTON AND SUSSEX.—Excursion to Lewes.
„ 24.—HACKNEY.—Members' lantern night.
„ 24.—S. LONDON.—Excursion to Kew Gardens.
„ 24.—HACKNEY.—Excursion to Hampstead.
„ 24.—LEYTONSTONE.—Informal meeting.
„ 24.—LIVERPOOL.—Excursion to Birkenhead Park.

Charterhouse Science and Art Schools and Literary Institute.—The winter session of this—one of the largest science and art schools in the United Kingdom—will commence on Saturday, September 24th, under the presidency of the Rev. Henry Swann, M.A. During the late session upwards of 1,000 students, mostly elementary teachers, availed themselves of the privileges afforded by this institution, and of this number nearly 700 presented themselves for examination, and were successful in obtaining a large number of class certificates, and also a fair number of honours certificates awarded by the Science and Art Department of South Kensington. Several students prepared for the Lond. B.Sc. (Int.) examination, and highly distinguished themselves. Instruction of a practical character is given in most of the sciences at a very nominal fee; whilst in art, at an equally low rate, students under the direction of five competent instructors can be advanced in their studies. Those who have leisure can at a very moderate charge attend the day classes in art. Day classes will also be held to prepare candidates for matriculation (Lond.), the clerical, medical (including dental), and other exams. Students who aim at becoming proficient in chemistry (organic and inorganic) have the opportunity of working in a well-fitted laboratory, capable of accommodating sixty students. Aspirants for university honours can at a very small expense be assisted in their studies. Classes for matriculation, microscopy Latin, Greek, French, German, shorthand, and music are taught by well-qualified teachers. Opportunities for study of photography, etc., are to be continued this session. Full particulars of the classes may be obtained from C. Smith, organising Secretary.

Chorley.—In connection with the Polytechnic, Limited, recently established in this town, a camera club has been formed which will be known by the name of "The Chorley Polytechnic Photographic Society." The premises, which are at present undergoing extensive alterations, are conveniently situated in Fellery Street, almost in the centre of the town, and it is expected that the dark-room will be ready for use in the course of a few days. At the meeting held on Wednesday last, the 7th inst., the following gentlemen were appointed officers:—President, Mr. J. T. Brierley; Vice-President, Messrs H. R. Dorning, R. Berry, and William Dornan; Secretaries, Messrs. Jas. G. Welch and Wm. Waring; Treasurer, Mr. Richard Gill. Judging from the attendance and the number of members who have enrolled themselves at the preliminary meetings, we have little hesitation in saying there is every prospect of this becoming a most successful organisation. Anyone interested and desirous of becoming a member, is invited to send his name to either of the Secretaries, from whom all particulars may be obtained.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance the *number* and *full title of the query* referred to.

QUERIES.

5812. **Lantern Screens.**—Will someone kindly say from experience what is the best material of a semi-transparent nature to use for the above, image showing through screen and for small sizes only, say 3 ft. disc? Would tracing cloth do?—HENRY.

5813. **Mounting.**—Using mountant of gelatine as in Wall's "Dictionary," what is the best way to mount gelatino-chloride prints? My difficulty is that I get a narrow defect all along the edges of the print. How should prints be pressed down either to card or to album leaves?—HENRY.

5814. **Stirn's Camera.**—Will any reader kindly tell me of what the advertised enlarging apparatus for Stirn's detective camera consists? Also, if there is any similar camera on the market in which you have separate plates, as I usually fail in trying to intensify one or two of the negatives when they alone are under-developed?—MEDICUS, R.N.

5815. **Herzheim's Paper.**—Can anyone give the prescription for mixing the toning bath for Herzheim's gel.-chlor. of silver emulsion paper, and also the address of maker?—A. B. L.

5816. **Fungus.**—Can any reader of the AMATEUR PHOTOGRAPHER tell me the cause of fungus forming on the insides of my toning bottles, and taking all the strength out of the solution?—AMPHOT.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Sept. 2nd.—No. 5801.
,, 9th.—Nos. 5807, 5808.

ANSWERS.

5785. **Glaze on Prints.**—So far as we know, it would be impossible to obtain an enamel surface on emulsion prints without squeegeeing to a support, nor would it be an easy matter to make a varnish to apply with a brush—the best that could be done in this way would probably be to strain the print in a printing-frame, absolutely flat, and then coat with amyl acetate and pyroxylin varnish.—EDITOR.

5786. **Opera-Glass Lenses.**—The lenses could be used for a fixed-focus hand-camera, but as they are not corrected for photography, allowance would have to be made for the difference of foci, and they would probably also require considerable stopping down. It would be far better to use a single achromatic lens.—EDITOR.

5790. **Instanto. Shutter.**—The speeds of this shutter are from about $\frac{1}{4}$ to 1-15th of a sec., with less exposure for sky.—EDITOR.

5794. **Address Required.**—The Brixton and Clapham Camera Club meets at 376, Coldharbour Lane, Brixton. Mr. F. W. Levett, 74, Geneva Road, Brixton, Hon. Sec.—EDITOR.

5799. **Condenser.**—Clock-face condensers are a delusion and a snare, and are never satisfactory; far better to buy some ordinary ones. With a 10 in. condenser there would be considerable loss of light—G N

5800. **Printing-in Clouds.**—It is quite possible, by painting over the print, merely the outlines, with gamboge paint, and covering the rest of the print with opaque paper, to obtain very good results The white line caused by black paper is merely want of experience.—EDITOR.

5802. **Gibraltar.**—Photography is prohibited at Gibraltar.—EDITOR

5803. **Developing.**—While it is no easy matter to state definitely the cause of failure, without seeing a negative or two, it sounds rather as though under-exposure was the cause. If the querist will send up a negative we shall be glad to help him—EDITOR.

5804. **Carbonate and Washing Soda.**—The difference between these two salts is that the former is the pure salt with a definite amount of water, whilst the latter is impure and contains a variable amount of water. It is said that the men who make it are paid by the amount of water they can get the salt to contain If required for developing, however, the one acts almost as well as the other, only for careful work the pure salt should be used.—EDITOR.

5805. **Reducing Intensified Negative**—Place the intensified negative in a freshly-made hypo bath for ten minutes; or else a still greater reduction may be obtained by using a 2 per cent. solution of cyanide of potash.—EDITOR.

5806. **Bleaching Prints.**—The slight bleaching with copper bromide means that some of the image is converted into bromide of silver, or a compound of bromide of silver and copper, which according to Liesegang, Stolze, and others is perfectly stable. It would be far safer to refix, and wash well after the bleaching, though.—EDITOR.

5796. **Chloride Printing.**—I hardly think that "Perplexed" will get a good finder *under* 3s., but Messrs. Sharp and Hitchmough, of Dale Street, Liverpool, have very good "Aptus" finder at 3s. 6d. It is a bi-concave lens, and shows objects at any distance always in focus, and wooden finders of the camera obscura pattern at 2s., but I recommend those at 3s. 6d.—THE GOWK.

5797. **Mottled Negatives.**—This probably arises from not rocking the dish during development.—THE GOWK.

5798. **Spotting.**—If the spots are transparent touch them out with Indian ink. Use a fine brush.—THE GOWK.

5809. **Positive Appearance.**—The appearance of positive seen on the glass side of your negatives is due partly to under-exposure and partly to under-development. All negatives show a certain amount of positive.—AMPHOT

5810. **Copying.**—By photographing with a half-plate. If a wide-angle is at hand by all means use it, and give a short exposure.—AMPHOT.

5811. **Elizabeth's Oak.**—H. I. C. can have a photograph of Queen Elizabeth's Oak (half-plate) by writing to me, enclosing stamps for postage.—T. G. ALLEN, 6, Cranworth Road, Sheffield.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

F. COE.—We do not undertake to reply by post. Let us know where the portraits were taken, in the house, garden, or where, and send us up a negative, and let us know what developer you use, then we can help you.

W. E.—The price of the Desideratum quarter-plate lens is 24s. Hockins' address is New Inn Yard, Tottenham Court Road.

CATTON.—Bromide paper is, as a rule, coated in the roll of about three-quarters of a mile in length. Cadett, of Ashstead, Surrey, and Edwards and Co., The Grove, Hackney, sell coating machines which run into several hundred pounds. Let us know what you want to do, in confidence, and we may perhaps help you.

T. HEADMORE.—The simplest reducer is Belitzski's. Dissolve 20 gr. of potassium ferric oxalate in 1 oz. of water, add 22 gr. of sodium sulphite, when dissolved add 7 gr. of oxalic acid and shake occasionally till the solution turns green, then pour off from the undissolved acid, then add 120 gr. of hypo and shake, lay the negative in water till soft, then in the reducer till reduced sufficiently, wash well and dry.

AMATEUR.—(1) At the price there is, we should say, nothing to beat it. (2) What price will you go to?

GEO. FELL, JUN.—So much depends upon the character of the picture that really nothing definite can be said. You may be surprised to hear that a yellow screen of particular shade will require at least three hours' exposure, and then if the plate was developed practically very little would be visible. To obtain the true rendering of some deep red and brown pigments, it is necessary to use a yellow screen of such a shade as to cut off all but yellow and red, and then allow these to act for a long time, and afterwards use a light screen with a short exposure to obtain the greens and blues. We should like to see a print, but we are afraid this would not be much assistance, unless we had the original to compare it with. Many thanks for the note, however.

LUX.—The most probable cause of your failure is that the tissue has been kept too long, and has become insoluble, though it may also happen that you have exposed so long that the whole film has become insoluble. Try a little slip of unexposed paper.

NOVICE.—We should say that the stains are due to the print coming in contact with hypo before toning.

H. H.—Medium isochromatic most decidedly.

D. J. G.—The prints should be washed before toning. Try Welford's bicarbonate bath, or else the one suggested in our correspondence columns this week.

G. E. T.—Good results can be obtained by using amidol with the films, but bromide must be used at least half grain to every ounce of developer. The results are fully equal to those from pyro and ammonia.

J. E. and W. W.—To obtain the best sunset effects you must use isochromatic plates, medium rapidity, and with these, under the other conditions named in your letter, we should say that 1-10th of a second would be sufficient. In developing keep down the pyro, and try for rather thin, soft negatives, or else you will get too harsh high lights. Be careful to remember that colour is useless to you; all you want is effective grouping of cloud masses.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

ADVERTISEMENTS *can be inserted under a number the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

Background.—Splendid new background, 8 by 7, flatted oils, garden grounds, value £2 2s.; what offers? photo sent.—Milburn, Photographer, Battle Hill, Hexham, Northumberland.

Cameras, etc.—Half plate camera (Fallowfield), all movements, Eastman rollholder, and three slides, 5 guineas; approval; deposit.—Broomhall, St. Margaret's, Twickenham.

Wide-plate landscape camera, never used, cost £7 10s., will take £3 10s., or exchange for hand-camera.—Sewell Brady, Portsmouth Road, Long Ditton, Surrey.

Exposure Meter, etc.—Watkin's exposure meter, with book of instructions, 10s.; Kershaw shutter, half-plate, in perfect condition, 10s., 1892.—No. 333, office of this paper, 1, Creed Lane, E.C.

Hand-Cameras, etc.—5 by 4 Kodak, equal to new, 30 films, fitted to hold 100, a bargain, £6 5s.—264, Hainton Street.

Good hand-camera, and splendid lot of etceteras, also magic lantern and slides, the lot 40s., or offer.—H. Wright, 13, Russell Street, Rochdale.

Samuel's patent hand-camera, 3 1-8th by 2 3-8ths in thorough condition, 13s. 6d., bargain.—Howard, 13, Parkmore Terrace, Brighton.

Leather covered quarter-plate hand-camera, fitted with Ross' 4½ in. doublet, of finest definition, and shutter working between combinations, price 70s., lens alone listed 5½ guineas.—E. Smith, 28, Burford Road, Nottingham.

Optimus lantern-size hand-camera, leather covered, 3 double backs, Euryscope R.R lens, *f*.6, 2 finders, good order.—Letters only to T., 379, Strand, W.C.

Hand-camera for sale, nearly new, Lancaster's omnigraph, 14s. 6d.—Colbourne, Lowbourne, Melksham, Wilts.

Lenses, etc.—Dallmeyer's 6 by 5 rapid rectilinear lens, with iris diaphragm, cost £5 17s. 6d., cash price £4.—Parker, Chemist, Scarboro'.

1892 Instantograph lens, good definition, bargain, 16s.—J. T. Titman, Alma Villas, Gosberton, Spalding.

Half-plate euryscope, 35s., half-plate R R., 18s., quarter-plate portrait, 8s., as new, all really good lenses, and very cheap.—John Browning, 8, Longfield Avenue, Black Horse Road, Walthamstow.

Rose' portable symmetrical lens, 5 in. focus, cost 70s., sell 45s.—Main, 75, George Street, Aberdeen.

Sets.—Underwood's 1892 half-plate Instanto set, good as new, only 63s.—Ricketts, Cheltenham House, Stroud.

Underwood's Instanto half-plate camera, Ashford stand, five double slides, R.R. and W.A. lens, and complete apparatus for turning out photographs, £8; worth double.—Davies, 22, Market Square, Pontypridd.

10 by 8 camera, first-class maker, three double dark slides, folding stand, solid leather locked camera case, separate canvas case for slides, all in perfect condition, 10 guineas.—J. B., Adamson, Sunnyside, Prince's Park, Liverpool.

Half-plate set, complete, price £17 10s.; Euryscope wide-angle lenses, Optimus long-extension camera, four double slides, Newman shutter, tripod, and various sundries, good value.—Address, J. H. Twiddy, c/o Housekeeper, 68, Cheapside, E.C.

Bargain! International quarter camera, lens, tripod, one wood and two metal slides with adapter, in leather-bound case, makes magnificent lantern slides.—Write, Rev. Hedley, Borough Road, Middlesbrough.

Complete half-plate outfit, comprising Scott's patent camera, one Darlot's rectilinear lens, one Darlot's wide-angle lens, Eastman rollholder, three double backs, tripod, waterproof case with straps, Marion's lantern slide making camera, five enamelled dishes, spirit level, etc., all in first-class condition, cost originally about £23. Particulars on application to "Camera," Imperial Hotel, Darlington.

A bargain, Lancaster's half-plate instantograph, two dark slides, R.R. lens, by London Stereoscopic Co., and Thornton-Pickard time shutter working behind lens with speed indicator; approval, £4.—Mahoney, photographer, Cappoquin, Ireland.

Quarter-plate camera complete, consisting of tripod lens, shutter, and case, also three dishes, two printing frames, and ruby lamp, cheap.—A. Partington, Molyneux Street, Longsight.

Quarter-plate mahogany camera, reversing back, two double dark slides, achromatic lens, and folding stand, first P.O. 12s. 6d. bas the lot; whole-plate mahogany camera, reversing back, one double dark slide and whole-plate lens, 15s. the lot.—James, 9, Bessborough Road, Ilford, Essex.

S. Dalby Smith, St. Thomas Street, Weymouth, offers perfectly new whole-plate camera, every possible movement, one double dark slide, 65s.; rapid rectilinear for above, with shutter, 55s.; half-plate camera, every movement, good condition, 3 double dark slides, 50s.; approval with pleasure, for they are bargains, costing double.

Lancaster's half-plate International camera, Silver Ring R.R. lens, iris diaphragms, three Lancaster's double slides and three Tylar's metal, four-fold tripod, solid leather, baize-lined case, Optimus finder, focusing cloth, etc., in excellent condition, thoroughly sound, no approval, only wants seeing, cost over 10 guineas, cash £7.—Thomas. "Lanteglos," Globe Avenue, Enfield.

Sundries—Macintosh, misfit, gentleman's fashionable black Paramatta luverness cloak, quite new, unsoiled, 26s., worth double; approval, with pleasure, state height.—P., 7, Dereham Road, Norwich.

Very handsome meerschaum and amber pipe in case, cost 22s. 6d., take 7s. 6d.; 6 white china silk bemstitched handkerchiefs (gentlemen's), from abroad, 10s., worth 25s., or exchange good quarter-plate camera.—Cam, 1, Vermore Street, Liverpool.

Clearing-out ancient model gun, frigate, suit captain £10, latbe 2¾ centres, bright head, 3 feet bed, 3 feet high, £2 10s.; also model marine copper tubular boiler, 16 tubes, pressure gauge, £6 10s..—Burt, 67, Forest Road, Dalston.

Vols. 1 to 9 AMATEUR PHOTOGRAPHER, handsomely bound, perfectly new, also several special numbers; what offers?—R. D., 30, Maresfield Gardens, London, N.W.

WANTED.

Hand-Cameras, etc. — Hand-camera wanted. Lowest terms to Sewell Brady, Long Ditton, Surrey.

Wanted, a good hand-camera, also good enlarging lantern, address.—J. Twiddy, 68, Cheapside, E.C.

Bargains in Hand Cameras. — Kodak, No. 4, size 5 by 4, new spool of films, warranted finest condition, in leather case, take £7 17s. 6d, cost £11 7s. 6d; Adams' Ideal hand-camera, twelve quarter-plates, finest rapid rectilinear lens, time and instantaneous shutter, as new, £5 15s.; Fallowfield's Facile, fitted rapid rectilinear lens, carries twelve quarter-plates, as new, £3 17s. 6d. Optimus magazine hand-camera, covered leather, carries 12 quarter-plates, finest Optimus rapid rectilinear lens, two finders, shutter, etc., as new, take £5 5s.; Talmer hand-camera, carries 12 plates, fine lens, two large finders, time and instantaneous shutters, as new, take 65s.; Steinbeil hand-camera, 9 by 12 centimetres, rapid rectilinear lens, two finders, shutters, carries twelve plates, bag changing, as new, take £4 10s., cost £10 10s.; Samuel's quarter-plate hand-camera for twelve plates, quite new, rapid rectilinear lens, two finders, take 27s. 6d.; Griffiths' best quality band-camera, carries six ¼-plates, two sunk finders, good lens, pneumatic shutter, take 30s., cost 42s.; quite new, all above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium) Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Cameras! Cameras! Cameras! Lenses! Lenses! Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus of every description bought, sold, or taken in exchange. Inspection invited.

Bargains in Lenses.—15 by 12 rapid rectigraph lens, Silver Ring, iris stops, grand definition, take £5 17s. 6d., quite new; whole-plate Voightlander's rapid rectilinear, fine definition, best order, 30s.; whole-plate Optimus rapid landscape lens, quite new, rotating stops, 35s; whole-plate Lancaster wide-angle lens, rotating stops, 15s.; 8½ by 6½ Ross rapid symmetrical, Waterhouse stops, grand definition, as new, £4 10s.; Wray's 7½ by 5 wide-angle rectilinear, rotating stops, as new, 47s. 6d.; half-plate aluminium rapid rectilinear, by Parkes, Waterhouse stops, 30s.; half-plate Ross' portable symmetrical, rotating stops, 4 in. focus, finest order, 45.s; half-plate wide-angle, by Morley and Cooper, rotating stops, as new, 27s. 6d.; half-plate Ross' rap'd symmetrical lens, as new, moveable hood, Waterhouse stops, take £3 17s. 6d.; Wray's landscape, Casket lenses, 5 in., 7⅜ in., and 10 in. focus. Iris stops, quite new, take 70s.; Ross' c. d. v. portrait lens, rack and pinion, finest condition, 35s.; Shew's c. d. v. portrait lens, Waterhouse stops, rack and pinion, as new, take 21s.; Optimus 5 by 4 rapid Euryscope lens, by Perken, Son, and Rayment, Waterhouse stops, as new, 47s. 6d.; quarter-plate Optimus rapid rectilinear, by Perken, Son, and Rayment, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.— On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Bargains in Cameras and Sets.—12 by 10 camera, double extension leather bellows, wide-angle movement, double dark slide, fitted fine rapid rectilinear lens and sliding stand, a grand lot, £9 17s. 6d.; Optimus whole-plate camera, leather bellows, reversing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterbouse stops, Thornton-Pickard shutter, three double dark slides, three-fold stand and case, £11 5s.; whole-plate Underwood instanto, wide-angle movement, leather bellows, double extension, rapid rectilinear lens, iris stops, fine definition, double slide, half-plate carrier and folding stand, as new, take £5 15s.; whole-plate camera by Hare, grand article, leather bellows, double extension, wide-angle movement, double slide changing box, for 24 plates, all changing slide, Optimus rapid rectilinear lens, Waterhouse stops, brand new three-fold stand and case, take £10 17s. 6d.; 7½ by 5 long-focus camera, by Gotz, wide-angle movement, leather bellows, reversing back, rapid rectilinear lens, and folding stand, set complete, £5 15s.; half plate Underwood's Instanto, wide-angle movement, double extension, fitted rapid rectilinear lens, slide, and folding stand, £3 17s. 6d; half-plate camera, by Houghton, all latest movements, grand article, fitted three double slides, rapid rectilinear lens, and double folding stand, £6 10s.; half-plate 1892 Instantograph camera, all latest improvements, Instantograph lens, iris stops, shutter, double slide, folding stand and case, take 72s. 6d., as new; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, three-fold stand and case, take £6 10s.; quarter-plate Lancaster's Merveilleux set complete, 15s.; Lancaster's Convention set complete, camera, lens, shutter, slide, and stand, as new, 40s.; quarter-plate aluminium Instantograph set complete, quite new, camera, lens, slide, shutter, and stand, 50s.; quarter-plate Instantograph camera, lens, shutter, slides, and folding stand, 32s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

NEGATIVES carefully retouched. Specimen negative retouched free. Terms on application.—Miss Agnes Miller, 20, Speedwell Street, Oxford.

IMPORTANT TO AMATEURS.—Negatives skilfully Retouched. Printed in silver, gelatino-chloride, etc., and Enlarged. Also Developing, Copying, etc.—Terms strictly moderate.—Address, Wilfred Emery, 24, South Street, Baker Street, W.

RICHARDS' Patent Corners, for mounting photos, prints, scraps, etc., in albums, scrap books, and mounts; clean, convenient, ornamental, self-contained, and always handy. Ready gummed, price 1s. the box or by post 1s. 1½d.—F. Watson, 17, Dartmouth Street, Westminster, S.W.

NORTON'S

RAPID RECTILINEAR LENSES

Complete with Cap, Waterhouse Stops, and Flange.

¼, 12/6; ½, 16/6; 1/1, 22/6.

Warranted English, and equal to those costing times the price.

C. GOODWIN NORTON, 38, Marchmont St., W.C.

The AMATEUR PHOTOGRAPHER

Telegraphic Address: VINEY, LONDON

Telephone No. 1645

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 416. Vol. XVI.] FRIDAY, SEPTEMBER 23, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

Our Views.—Transmitting Images by Telegraph — Courtonne's Method—Photography and Exploration—The Personal Equation—Lectures at Societies—The P. S. G. B. and Affiliated Societies—Ourselves and Lectures—Cadett and Neal's Monthly "Dry Plates"—Spiritualism and Photography—Spirit Photographs—Technical Lectures at the People's Palace—City of London Y.M.C.A. Classes—The Use of Lectures—Interchange of Civilities among Photographic Societies—Our 1892 Slides—Tables of Exhibitions—Todmorden Exhibition—Exeter Exhibition—Mr. Pickering's Experience.

Chit-Chat.—By "Chatterbox."

Leader.—Notes on Colour.

Letters.—Stripping Gelatino-chloride Prints (Forret)—Hydrokinone Development (Wilkinson)—Camera Fittings (G. T. W.)—Eastman and Ilford Printing-out Paper (Pickering)—Affiliation of Societies Scheme (Thomas)

Articles.—General and Photographic Chemistry (Conrad)—How to Make a Set of Photographic Apparatus (H. J.).

Holiday Resorts.—In the Romney Marsh (F. G. Reader)—To Arcadia with a Camera (Lt. Harvey).

Apparatus.—The Imperial Special Lantern Plate and Bromide Opals—The Crouch-Dresser Hand-Camera—The Cadett Lightning Plates—The Varioscopic Lens.

Catalogues.—Wm. Tylar—Wm. Hume.

Reviews.—Recepte und Tabellen fur Photographie (Eder)—How to be a Successful Amateur Photographer (Lancaster)—Virages et Fixages (Mercier)—Annuaire Général de la Photographie (Roux)—Congrès International de Photographie.

Societies' Meetings.—Belfast Y. M. C. A.—East London—Fairfield—Greenock—Hackney—Kendal—Lewisham—London and Provincial—Newcastle—Putney—Sheffield—Sutton.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months, 5s. 6d.....	Twelve Months, 10s. 10d.			
Postal Union	" "	6s. 6d	" "	13s. 0d.	
Out of Postal Union ..	" "	7s. 9d.....	" "	15s. 3d.	

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 41.—"Inland Scenery with and without Figures." Latest day, Oct. 24th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, November 11th.)

It has long been one of the Utopian ideas to invent some instrument which shall enable images of objects to be telegraphed from a great distance. Last year an American, Amstutz, was reported to have accomplished this, but we have heard but little further of it. Edison, it is well known, has been busy on the same subject. But, according to *Figaro*, a young French chemist, M. H. Courtonne, deposited with the Academie des Sciences in 1889 a sealed report of his researches in this direction, and of which only from fear of being forestalled the main details are now made public.

M. Courtonne, it is said, substitutes a dry plate for the diaphragm in an ordinary telephone receiver, and by some special apparatus has actually succeeded in transmitting the waves of light the same as sound waves are transmitted. R. E. Liesegang published last year a small brochure on the subject, which attracted a good deal of attention at the time.

Photography is rapidly replacing sketching in the hands of explorers. H. M. Stanley used photography on his last African expedition, and now Lieutenant Peary, who has just returned to America from wintering in the northern parts of Greenland, brings with him a number of photographs of arctic scenery, etc. The value of such photographs will be, of course, far greater from their greater truthfulness, as in sketching there is always the personal equation to discount, which is in some cases by no means inconsiderable.

The personal equation, or the influence of the training and, in many cases, the wishes of the observer, is always an important consideration in observations of a scientific nature. In astronomy and microscopy this influence is always of great moment, and for this reason partly photographs are so much more to be relied upon than sketches.

We have had a pathetic letter from the Secretary of a photographic society, who complains of the difficulty of providing sufficiently entertaining pabulum for the winter session. He says, "Some of our own members have responded well to my *demands* for papers, but what we want is a few experts who will stump the round of societies and give lectures." Our correspondent does not state whether he expects the experts to give their lectures free. This is an important point. We know two or three workers who are

being constantly pestered to give lectures or demonstrations; and, as one says, "What good does it do me? I have to travel seven or eight miles, expend two or three shillings in fares, besides a lot of time, and then find that there are perhaps only twenty, or at the most thirty, amateurs to listen to me."

UNDOUBTEDLY there is a want in this respect, and we believe more advanced workers would willingly come forward with help if their expenses were guaranteed, and they were sure of getting a good audience. One of the inducements put forward by the P. S. G. B. in the affiliation scheme was, we believe, the circulation of papers to affiliated societies. Possibly if greater support were given to this scheme, and the expenses were guaranteed by the societies, more might be done in this way.

WE had ourselves an idea of formulating a series of lectures on elementary and practical subjects for the winter session, but want of time and the question of expenses has prevented us from doing so. If we did arrange such a scheme, would the societies respond? Now, please, honorary secretaries, don't all speak at once.

WE noted last week the issue of a new monthly by Elliott and Son. This week we have to record the issue of another monthly, called "Dry Plates," by Cadett and Neal, whose plates are reported on elsewhere in this issue. "Dry Plates" is an eight-page paper, which this month has some very useful notes on ammonia, and an article on Hurter and Driffield's Actinograph.

AT the present time there seems to be an increased energy in spiritualistic and kindred circles, and many proofs have been brought forward as to the oxistonce of materialised spirits. Possibly some philistine may suggest that many of the effects are really due to the materialisation of spirits, and ardent ones too; but amongst the proofs have been shown prints and negatives in which the Mahatmas or materialised spirits are distinctly seen. Prof. Elliot Coues has collected about fifty of these spirit photographs, and has given a scathing exposition of the fraud, for fraud it is. No doubt many of our readers can show ghost-like negatives, which are due in part to over-exposure or under-development. But if they wish to amuso their friends it is no difficult matter to make these Mahatmas impress their image on the sensitive plate.

To produce a spirit on a plate, set up the camera and focus in the ordinary way on a person wrapped in a sheet or other article, such as these guardian angels usually attire themselves in, and placing the clothed spirit, slightly out of focus, against a dark background, give a short exposure, then cap the lens and allow the spirit to walk away. If one now places the real sitter in the centre of the focussing screen, and gives an ordinary exposure, one will find on development a materialised angel visible, and have one of these spiritualistic frauds. A well-known English clergyman has lately been quite conspicuous by his advocacy of these spirit photographs, and has actually had an oxhibition of them in his vestry.

ON every hand we find evidences of the approach of winter, and this is particularly noticeable in societies, the Secretaries of which aro now busy with their programmes. Evidence from other sides also is not wanting. The technical schools of the People's Palace will on the 26th inst. open their winter session, and of the subjects included in these classes is Photography, with Mr. Chas. W. Gamble as lecturer, Mr. Alfred J. Newton as assistant, and Mr. Wolfgang Arndt as instructor in retouching. From the syllabus we find that there are three courses: (1) elementary, technical, and practical photography, (2) an advanced course, and (3) a special afternoon practical instruction class.

BESIDES the above the City of London Y.M.C.A., of 186, Aldersgate Street E.C., will hold evening photographic classes on Fridays, under Mr. B. Foulkes-Winks, who will also give an introductory lecture on the 29th inst., for which any of our readers may obtain tickets on application to Mr. Foulkes-Winks at the above address. The fees for all the above classes are merely nominal.

WE have often been asked what is the use of these lectures, and we certainly can say that such lectures will form a sound basis for practical work. Though many men sneer at the scientific side of photography, there is not a doubt that a good, sound training in the science of chemistry and optics will do much to lighten the difficulties which are sure to be met with in practice, and no one with any artistic feeling will be the worse for such knowledge.

IN our correspondence columns appears a letter from Mr. Philip Thomas, the Hon. Secretary of the Cheltenham Amateur Photographic Society, suggesting a very good plan which we are sure will lead to better *camaraderie* amongst amateurs. We trust English societies will immediately respond, and we shall be glad to do all in our power to help the movement. Speaking on the authority of a *confrere* who has lately returned from the States, we are quite certain that not only the Chicago but also the other American societies will respond if applied to.

THE following are the dates we have fixed for our 1892 Lantern-Slides :—

1892.		1893.	
Oct.	13.—Birkenhead	Jan.	2.—Richmond
,,	18.—Birmingham	,,	6.—Blackburn
,,	21.—Burton-on-Trent	,,	10.—Phot. Soc., Ireland
,,	24.—Delph	,,	13.—Munster
,,	27.—Liverpool	,,	17.—Cheltenham
,,	29.—Todmorden	,,	23.—Devonport Cam. Club
Nov.	3.—Barrow	,,	25.— ,, R. N. College
,,	9.—Kendal	Feb.	3.—Stockton
,,	14.—Ulster	,,	7.—Newcastle
,,	15.—Belfast	,,	10.—Carlisle
,,	18.—Preston	,,	12.—Sunderland
,,	22.—Rodley	,,	17.—York
,,	24.—Louth	,,	18.—Bootham
,,	28.—King's Lynn	,,	22.—Stockport
,,	30.—Yarmouth	,,	23.—Oldham
Dec.	6.—Wolverhampton	,,	27.—Sheffield Optical
,,	9.—Warrington	March	1.—Crewe
,,	13.—Manchester Am. Phot. Soc.	,,	6.—Accrington
		,,	14.—Hove
,,	16.—Lewisham	,,	18.—Leytonstone
,,	20.—Faversham	,,	21.—Sydenham
,,	23.—Maidstone	,,	22.—Woolwich
,,	27.—Guildford	,,	28.—East London
,,	29.—Sutton	April	5.—Ramsgate

So far as possible, we have fixed the dates so that societies may be saved a heavy carriago. We trust that the Societies will endeavour to make these convenient, though if change of date is desired we will try to meet the same.

Those secretaries who have not sent booking fees are requested to do so at once.

Exhibitions without number will be soon in full swing, and, as in past years, we have compiled a table giving the essential information about them.

We have also received notice of the opening of the Todmorden Scientific Association's Photographic Exhibition on November 5th.

The Exeter Amateur Photographic Society will hold an exhibition in the last week in November. Full details will appear later on. It will be open to all, amateurs and professionals, but the former only will be eligible for competition.

There is an old proverb which tells us we should look before we leap. Mr. Pickering, the Hon. Secretary of the Leicester Photographic Society, whose letter on toning gelatino-chloride papers we published last week, in which he offers to send a print toned by his method, did not look before he leapt into type, and the consequence is what he states in his letter of this week. Our readers will pity him and congratulate us.

Chit-Chat.

In these days of "scientific" exposure I am glad to note that a practical photographer like Mr. Bedding has the courage to advocate the study of the appearance of the image on the focussing screen, and the consequent cultivation of judgment in learning to correctly estimate exposure, rather than trust to the use of an exposure meter. He is quite capable of holding his own against the "disinterested" attack of the gentleman who seeks to question his method, without any championship of mine, but being a firm believer myself in the superiority of "judgment and brains" over any scientific jugglery yet invented for the purpose, I cannot let the opportunity pass of saying a word on the subject. One remarkable and to me significant circumstance is that the inventors of these ingenious instruments are rarely, if ever, *skilful practical photographers;* nor do we often find clever workers resorting to the use of such quasi-scientific accessories. Again, calculations arrived at by different instruments rarely agree. Only the other day I saw two amateurs calculating the exposure for a particular view, under precisely similar conditions, with exposure meters of different construction, and they respectively arrived at five and fifteen seconds as being the correct (?) exposure. *Verbum sap.*

I wonder what our plate-makers think of the estimation of the relative speeds of plates given by a writer in the Amateur Photographer recently. As one with a great capacity for "plate-spoiling," I should in several instances take great exception to the accuracy of the comparative speeds given. Seriously, such tables, to be of practical value, must be scientifically accurate, and, like Cæsar's wife, above suspicion, and the results obtained should be checked independently, *before* publication.

Another proposal for a new photographic society! When is the multiplication of societies to cease? They are already, in London, far too numerous, and in many suburban districts the amalgamation of neighbouring societies would be advantageous to all concerned. Let Mr. Wilton, who suggests a new society for Stratford, communicate with the Leytonstone Society. I had occasion, in an official capacity, to visit the exhibition of that young society last year, and I noticed that the work of some of the members showed great promise.

Apropos of photographic societies, the proceedings at technical meetings are frequently of such a character as to invite sarcastic comment. The "gift of the gab," if the Editor will pardon me the vulgarism, is unfortunately, the prerogative of but a few, and the natural result is that all the talking in not a few of the societies is done by one or two individuals with a degree of regularity which in most cases becomes almost monotonous. I would suggest to those gentlemen who know everything, or think they do, and are so eager to communicate the fact to their less fortunate fellows, that, in the interests of a society, much good might accrue by giving the younger and more diffident though possibly not less well-informed members, the opportunity of contributing to the common good, by answering queries and joining in discussions.

I have read "Surgeon's" letter carefully, but I cannot see that he makes the case for hydroquinone any stronger than it was before. Your editorial comment, too, was rather unkind to a gentleman who tells you that Mr. W. K. Burton is "unscientific" and addicted to "rule of thumb" procedure!! Well, well, the poor professor is fortunately a long way off, so perhaps the force of the accusation will in some degree have spent itself by the time it reaches him. Seriously, I think all that you and the rest of the "presumed leaders" (!) in photography have done in regard to this developer is to recommend pyro to beginners in preference to hydroquinone, because of the greater tendency of the latter, in unpractised hands, to produce hardness and lack of gradation. To such advice no experienced photographer would take exception, though, of course, with care and skill, it is possible and easy to obtain both softness and gradation with hydroquinone.

Notwithstanding the mud throwing which has been indulged in from certain quarters, I understand that very little has stuck to the walls of the P. S. G. B., and that the success of the Exhibition will be equal to that of previous years. Lamentable though it be, the *fracas* of last year will doubtless be productive of good, for, undoubtedly, reform in the management and organisation of photographic exhibitions generally is greatly needed, and the suggestions upon this subject made by Mr. Horsley Hinton in the last issue of the Amateur Photographer are deserving of the closest attention by all interested.

Last week I wound up with a growl, this week I will conclude with a "purr," and it is a complimentary one too. It is the habit of some of your contemporaries to be continually lauding their own journalistic prowess; let me, "for this occasion only," call attention to the excellence of the last number of the Amateur Photographer, both in literary matter and illustrations. Your readers, I am sure, do not overlook the fact that in photographic journalism, as in other things, quality is to be preferred to quantity.

Chatterbox.

Mr. A. E. Bailey, of Rose Bank, South West Road, Leytonstone, the Hon. Sec. of the Leytonstone Camera Club, will be glad to forward entry forms for the open classes of their exhibition, which commences on November 10th.

NOTES ON COLOUR.

III.—COLOUR CONSTANTS.

COLOURS as we know them, whether prismatic or pigmentary, have certain constants or properties, and these constants have considerable bearing upon our subject, therefore a brief consideration will not be out of place.

We have observed that certain wave lengths produce certain colours, and that these colours may be so accurately defined that when we speak of prismatic red of line A, we know exactly the tint in question. When all the waves of every length act upon the eye, we receive a sensation of white. Comparing any colour, whether pigmentary or natural, such as that reflected from a scarlet geranium, with the prismatic colours, it will be found that we never can find an exact match. The question is, why not? To match the tint of our geranium with the spectrum, it will be necessary to mix white light with the spectrum, because if we examine the light reflected from the scarlet geranium we find not a pure spectrum red, but a red mixed with a good deal of the other colours of the spectrum; or, in other words, all natural or pigmentary substances when illuminated by white light, reflect not only the particular colour of that substance or object, but also a good deal of white light. Taking an example to make the case plainer, we will suppose that we have an oil painting, or rather a broad band of oil colour, say green, a bright emerald green, we shall find that it is impossible to match this tint in the spectrum, but if we mix with the green of our spectrum a small proportion of white light by reflecting a beam of white light into it, we may match our pigmentary colour exactly. Approximately the result will be, assuming the amount of light reflected from the oil pigment as = 100, that 80 parts of spectrum green and 20 parts of white light will make our emerald green. Therefore, we may say, borrowing a term from the analytical chemist, that the light reflected from our pigment is adulterated with 20 per cent. of white light, and we thus obtain our first constant purity.

The next constant is not easy to determine. For this purpose we must have recourse to a difficult photometric calculation, by the aid of rotating discs. Thus we may have two colours which are equally pure; thus two emerald greens, both containing 80 per cent. of green light and 20 per cent. of white light, yet these two greens may not match, one being three times brighter than the other, and to equalise the two we must either illuminate the one with a feebler light, or the other by a more powerful light. Thus we find brightness, or luminosity, our second constant. Vierordt* has made a series of experiments, the results of which are tabulated as follows:—

TABLE OF THE LUMINOSITY OF DIFFERENT REGIONS OF THE PRISMATIC SPECTRUM.

Colour.	Position.	Luminosity.
Orange ..	.. C line	.. 12
Yellow ..	.. D „	.. 76
Yellow-green	D ½ E „	.. 100
Green ..	.. E „	.. 37
Blue ..	.. F „	.. 12·8
Blue-violet	.. G „	.. ·8
Violet ..	.. H „	.. ·07

According to Eder† the relative brightness of the spectrum colours are given somewhat differently:—

Colour.	Position.	Luminosity.
Orange ..	C line	.. 10
Yellow ..	near D „	.. 80
Yellowish-green	„ D „	.. 100
Green	E line	.. 30
Bright blue ..	F „	.. 10
Violet	H „	.. 1

These tables will be referred to again, and special attention drawn to the same. The experiments necessary to determine the luminosity of colours by the aid of revolving discs are hardly within our province. For account of these see Maxwell's papers in "Philosophical Transactions," vol. cl., and Rood's "Modern Chromatics," pp. 35, 210, etc.

The third constant of colour is described by the word hue, that is to say the exact colour of the spectrum which is perceived by the eye. To accurately observe the third constant, a simple one prism or a direct vision spectroscope may be employed, it only being necessary to use a special eye-piece devised by Dalton, which is provided with an adjustable diaphragm which enables any set of wave lengths to be isolated at will and compared with a fixed scale.

Aubert, in his "Physiologie der Netzhaut," found that the eye was sensitive enough to detect an admixture of one part of white light in 360 parts of coloured light. He also determined that differences of $\frac{1}{120}$ to $\frac{1}{150}$ in luminosity could also be detected, and that an admixture of from $\frac{1}{100}$ to $\frac{1}{300}$ of a certain coloured light with another coloured light, gave rise to recognisable differences in hue or wave length. The estimation of the amount of coloured light in sunlight is not a difficult matter; it is only necessary to multiply the space occupied by the colour in the spectrum by its luminosity.

THE AMOUNT OF COLOURED LIGHT IN 1,000 PARTS OF WHITE SUNLIGHT.

Red	54
Orange red	140
Orange	80
Orange yellow	114
Yellow	54
Greenish yellow	206
Yellowish-green	121
Green and blue-green	134
Cyan blue	32
Blue	40
Blue-violet	20
Violet	5
	1,000

From this table we note one curious fact, that the so-called non-actinic or visually active rays are in much greater proportion than the chemically active. Thus dividing the spectrum at yellowish-green, we find the total to be—visually active rays 769, chemically active 231. Attention to this particular point will be directed again later on.

* Poggendorff's "Annalen," vol. cxxxvii., p. 200.
† "Ausfuhrliches Handbuch der Photographie," Th. 3, p. 157-158.

Letters to the Editor.

STRIPPING GELATINO-CHLORIDE PRINTS.

SIR,—Mr. Craig assumes, somewhat cynically, that the average amateur has at least *a few* spoiled negatives which can be used for enamelling purposes, but if Mr. Craig's method be adopted throughout, I am afraid the operator will soon get through a pile of such negatives. The directions are: use a sharp-pointed knife and cut right through to the glass. Now, these cuts or knife thrusts leave their mark on the glass, and are faithfully reproduced on the enamelled surface. One or two fine hair lines are not of much account, but when they cross and re-cross each other, the plate bearing them, whether of glass, vulcanite, or iron, is certainly not suitable for enamelling prints.

If the glass plate be scrupulously clean, the dry print with its backing can generally be stripped by merely starting it with the point of a knife, while with the specially prepared iron plate I have

had no difficulty in removing the print; in fact, thoy occasionally drop off if the plate be put in a warm place.—I am, yours, etc.,
Edinburgh. J. A. Forret.

* * * *

HYDROKINONE DEVELOPMENT.

Sir,—Replying to your correspondent, "Surgeon," my objection to hydrokinone is exactly that of yours, viz., it makes the high lights too hard.

My strong conviction, based upon a considerable amount of experience and study of the question, is that out of ten exposures made nine are over-exposures. I, of course, exclude hand camera work.

I quite agree with "Surgeon" that bromide is not needed to anything like the extent to which it is used; indeed, scores of plates are made to appear under-exposed and hard by its misuse.

Years ago I was much struck by Mr. B. J. Edwards's suggestion to develop plates with a solution weak in pyro and bromide but normally strong in alkali. This rushes up a thin flat image, when the solution is poured off and another applied, strong in pyro and bromide but weak in alkali, which soon intensifies the image to the required density. That this is the best method known to get a properly gradated negative there is little doubt, but then Mr. Edwards, Captain Abney, and others, who have on various occasions enlogised the method, forgot to tell us that such a mode of development was only possible with plates rich in quality and quantity of emulsion. Hence, no doubt, the roason why this system is not better known. My test of a good plate is that after prolonged development, keeping the image very weak in contrast, density may be got readily when required. Few of the cheap plates will do this.

The advantage of such a style of development is that the negative is even and soft, from the highest lights to the deepest shadow, whereas by the usual method of using a normal developer there is a considerable leap from the highest lights to the next series. To make my meaning clear, let us suppose the gradation to be represented by a flight of steps twenty in number, the topmost step representing the highest light and the bottom one the deepest shadow. Then, whilst Edwards's method would give us an almost perfect gradation throughout, we, with a normal developer, would get scarcely anything between the highest lights and half-tones, *i.e.*, tones represented by steps No. 3, 4, and so on to say 10 would be missing. Now kinone makes matters still worse, for steps between say 2 and 15 would probably be missing. If the plate is poor in silver, then by all means use it; but the better a plate is, the worse does kinone suit it.

For some months past I have been using Rodinal, and as my work includes interiors, exteriors (often 15 by 12 size plates), instantaneous, and studio work, I think I may claim to know something of it; and all I can say is that for *all* camera work it is simply perfect.

I am aware Mr. Welford and others say that density cannot be had with it, but that is certainly not the case with me. I use the hand-camera sometimes, mostly working at highest speed of Kershaw shutter, stop *f*/11, and can get full density in three minutes if neccessary, but I prefer to develop about that time with a normal strength (one in forty-five) for that time, pour off and apply a fresh solution of one in eight or ten. This soon brings density. I have also tried Amidol, and after repeated trials can see no advantage whatever over Rodinal, the latter being rather quicker of the two and quite as powerful.

With Rodinal I only use bromide for interior work, over-developing a little, and then slightly reducing so as to get a good clear negative.—Yours truly, H. Wilkinson.

* * * *

CAMERA FITTINGS.

Sir,—I trust the suggestions contained in this letter will not put "H. J." to too much trouble, but I think the information desired would materially assist many of your readers besides myself, in trying their hand at camera-making.

Would "H. J." kindly tell us from what firm or firms the metal fittings for the items treated upon can be obtained, and if in aluminium as well as brass?

Also what tools are necessary for the satisfactory production of the cameras, etc.? I have a few rough joiners' tools, with which I am in some degree proficient, but very few of them, I fear, are at all applicable for camera work, not being sufficiently delicate.

If "H. J." will go so far as to enlighten us on these points, I have no doubt he will confer a favour on many of your readers, besides—Yours, etc., G. T. W.

[The above letter was unfortunately received too late for us to obtain an answer for this week's issue. Messrs. Lancaster, Fallowfield, Adams, Platt and Witte, Park and Lonsdale Bros., besides numerous other dealers, offer brass fittings for cameras. We are not aware that any firm have placed aluminium fittings on the market, though they could doubtless be obtained from Messrs. Beck or Watson. —Editor.]

* * * *

EASTMAN AND ILFORD PRINTING-OUT PAPER.

Sir,—I was not aware what a storm I was invoking on my head when I offered to send a specimen print to any of your subscribers who might wish for sample of toning of gelatino-chloride paper by my process. The result so far (Monday) is that I have received 187 letters from all parts of the country, and some from Germany and the Continent as far as Frankfort. I am endeavouring to supply them, but I am afraid the great number to be toned will almost preclude that attention I should like to give them personally, as business claims compel me to depute the various processes to others. If, therefore, any of my correspondents receive prints which are not as satisfactory as they were led to expect, they must kindly excuse me, and to such I would say, try the process for yourself and be convinced.

It must be gratifying to you, and satisfactory to your advertisers, to know that your useful weekly has such an international circulation.—I am, yours, etc., H. Pickering
(Hon. Sec., Leicester Phot. Soc.)

* * * *

AFFILIATION OF SOCIETIES SCHEME.

Sir,—It has appeared to me for some time past that, with the powerful assistance of the photographic press (which seems to be seldom invoked in vain), the practical usefulness of the host of societies throughout the United Kingdom might be greatly extended if some system of reciprocity could be introduced with regard to the use of dark-rooms by visitors, and their admittance to meetings, excursions, etc. To put the scheme into practice, I propose that the secretaries of such societies as are willing to throw their premises open to all other societies who reciprocate should write to me giving particulars of the conveniences which visitors may expect to find there. These societies would then be classified, and I would send a full list to the photographic journals. All the secretaries interested would thus be put in possession of the fullest particulars of the resources of each society affiliated. A system of freemasonry would thus be initiated which could not fail to make the practice of amateur photography still more pleasant and fascinating. Most of us when visiting a strange town will appreciate the advantage of being able to change plates, and possibly develop without fuss or favour, to say nothing of the introductions to local amateurs in a position to give much useful local information and asssistance. I cannot but think that if this idea be carried out, and perhaps enlarged upon later, it must prove of general benefit, and perhaps do something towards preventing the disappearance of some of those societies which are missed from our midst from time to time.

I see no reason why such affiliation should be restricted to British societies only; for instance, will Chicago societies reciprocate?

Perhaps members of societies will draw the attention of their secretaries to this letter and urge action?—Yours truly,
Philip Thomas.
Secretary, Cheltenham Amateur Photographic Society.

General and Photographic Chemistry. — VIII.

By E. C. Conrad, F.C.S.

THE NON-METALLIC ELEMENTS AND THEIR COMPOUNDS.—(*Continued*).

The Halogens.

This term, derived from the Greek, signifies producers of sea salt; it is applied to a group or family of four elements named chlorine, bromine, iodine, and fluorine. They all unite with one equivalent of hydrogen, producing important acids, and their potassium and sodium salts are analogous

in physical properties to sodium chloride or common salt. The first three elements more especially show a very close relationship in chemical action, while their physical characteristics exhibit a gradational difference; thus at ordinary temperatures chlorine is a gas, bromine a liquid, iodine a solid In chemical activity and atomic weight they come in the same order, chlorine being most active, with a weight of 35·5, and iodine the least active, with a weight of 126·9, bromine occupying a central position in activity, with a weight of 80.

CHLORINE (Cl=35·5).

Oc.: Chlorine is never found free in nature, but always combined with metals, forming chlorides of which the most important is sodium chloride or common salt, which forms the principal part of the soluble matter contained in sea-water, and also exists in many springs and in large beds as rocksalt in many parts of the world, especially Cheshire, Austria, Russia, and America. M.: Chlorine can easily be obtained—(1) By gently heating a mixture of sodium chloride, manganese dioxide, and dilute sulphuric acid; Eq.: $2NaCl+MnO_2+2H_2SO_4=Na_2SO_4+MnSO_4+2H_2O+Cl_2$. (2) By heating a mixture of manganese dioxide with hydrochloric acid; Eq.: $MnO_2+4HCl=MnCl_2+2H_2O+Cl_2$. P.: Chlorine is 2·4 times heavier than the air, and water dissolves about twice its volume of the gas. It must therefore be collected by downward displacement. Chlorine is a yellowish-green gas of a pungent odour; it attacks the membrane of the throat, producing sickness, and even death if inhaled in large quantities. Under a pressure of six atmospheres at 0° C. the gas is condensed to a yellow mobile liquid of S.G. 1·33. A saturated solution of the gas on cooling deposits a crystalline compound, having the composition $Cl_2 10H_2O$, and if this is gently heated in a tube closed at both ends the gas can be liquefied by its own pressure. Chlorine is a very active chemical agent; thus phosphorus bursts into flame in the gas, and arsenic, antimony, copper, iron, etc., will when finely divided burn in it, forming chlorides. Chlorine also combines directly, at the ordinary temperatures, with many compounds, such as sulphur dioxide; but its most remarkable property is its intense affinity for hydrogen. A mixture of the two gases combine with explosion on exposure to sunlight, forming hydrochloric acid, HCl. A lighted candle placed in an atmosphere of chlorine will continue to burn with a dull, very smoky flame, the chlorine combining with the hydrogen of the wax to the exclusion of the carbon. A paper moistened with turpentine $C_{10}H_{16}$, and introduced into the gas, will often burst into flame from the energy of the combination of the hydrogen and chlorine, while the carbon is given off as a dense black cloud. Chlorine gradually decomposes water in sunlight, forming hydrochloric acid and liberating the oxygen. If there is any substance present that can combine with the liberated oxygen, which being in the nascent state is very active, the action goes on rapidly even in the dark. Thus chlorine acts as a bleaching agent, a disinfectant, and an oxidising agent in the presence of water, by setting free the oxygen which oxidises the colouring matter or other substances present.

Test.—(1) All chlorides heated with manganese dioxide and sulphuric acid give chlorine gas. (2) Any soluble chloride gives with free nitric acid and silver nitrate a white precipitate of silver chloride (AgCl), which is easily soluble in ammonia.

HYDROCHLORIC ACID, HCl=36·5.—Syn.: Muriatic acid, spirit of salt. Oc.: In small quantities in the exhalations from active volcanoes. M.: It has been already noticed the chlorine and hydrogen gases combine with explosion in sunlight to form this acid, but if the mixed gases be exposed to diffused light this combination takes place gradually. It is usually prepared by heating a mixture of sodium chloride with sulphuric acid, Eq.: $2NaCl+H_2S=O_4Na_2SO_4+2HCl$. Any chloride heated with sulphuric acid will give a similar reaction. P.: Hydrochloric acid is a colourless, irrespirable, incombustible gas, of a penetrating odour. Under great pressure the gas is condensed to a colourless liquid of S.G. 1·27. If the gas is passed over heated manganese dioxide, both are decomposed into chlorine, water, and manganese chloride, Eq.: $4HCl_2+MnO_2=Cl_2+2H_2O+MnCl_2$. Water at the ordinary temperature dissolves about 450 times its volume of hydrochloric acid gas, forming a strong acid solution of S.G. 1·21, which fumes strongly in the air, and gives off large quantities of the gas on gently heating. After the excess of gas has been expelled, a point (varying with the pressure) is reached at which the composition of the solution is unchanged. At ordinary pressures a constant proportion of acid and water distil over together at 180° C., the distillate having a S.G. of 1·1, and containing 20 per cent. of the gas. Unless otherwise mentioned, hydrochloric acid always means a solution of the gas. Thousands of tons of this acid are produced every week as by-products in the manufacture of sodium compounds, but this crude acid is very impure, being of a yellow colour, and generally containing iron, arsenic, sulphuric acid, and some chlorine gas. This impure acid can be used for preparing chlorine, but for other purposes a pure, colourless solution should be used. As a reagent, an acid of S.G. 1·16 diluted with three times its bulk of distilled water makes a convenient strength.

Action of Hydrochloric Acid on the Metals.—Metals not acted on:—Silver, mercury, arsenic, gold, platinum. Metals slightly dissolved: Lead, antimony, copper, bismuth, tin. Metals quickly dissolved: Iron, aluminium, chromium, manganese, zinc, nickel, barium, calcium, etc. All metals on dissolving form a chloride, and hydrogen is always set free.

Solubility of Chlorides.—All the chlorides, with the following exceptions, are soluble in water. Lead chloride, $PbCl_2$, soluble in 140 parts of cold water, and readily in boiling water. Copper chloride, Cu_2Cl_2, almost insoluble in water, soluble in ammonia, hydrochloric acid, and in a solution of sodium chloride, silver chloride, AgCl, insoluble in water, soluble in ammonia. Mercury chloride, Hg_2Cl_2, insoluble in water, decomposed by ammonia. Gold and platinum chlorides, AuCl, $PtCl_2$, are almost insoluble in water; $AuCl_3$ and $PtCl_4$ are soluble in water. It will be noticed that most of the insoluble chlorides are those of metals not acted on directly by hydrochloric acid; many of these are formed by the action of the acid on a salt of the metal Ex.: silver chloride from silver nitrate. Eq.: $AgNO_3+HCl=AgCl+HNO_3$.

U.: Hydrochloric acid is used as a solvent, and for the preparation of chlorides and chlorine gas. U.P.: A dilute solution is used for clearing platinum prints by dissolving out the ferric oxalate, and for a variety of minor uses.

Tests.—The same as those given under Chlorine.

AQUA-REGIA OR NITRO-HYDROCHLORIC ACID.—M.: By mixing one part of strong nitric acid with three parts of hydrochloric acid (it should be prepared as required). The nitric acid acts on the hydrochloric acid to form free chlorine, which dissolves in the acid liquid, which quickly becomes yellow, and after a time orange-red. U.: To dissolve gold, platinum, and some of the rare metals which are not dissolved in either of the acids separately, and also as a powerful oxidising agent in analytical chemistry. All the metals and most compounds are soluble in aqua-regia, with the following exceptions: the sulphates of barium, strontium, calcium, and lead, the chlorides of lead and silver, silica and

most silicates, stannic oxide, calcium fluoride, sulphur and carbon, and a few ignited or native oxides.

Oxides and Oxyacids of Chlorine.—A list of these acids has already been given in the introduction. The following are their most important properties and compounds.

Chlorine Monoxide or Hypochlorous Oxide, $Cl_2O=87$.—M.: By passing a slow current of chlorine over well-cooled mercuric oxide. Eq.: $HgO+Cl_4=HgCl_2+Cl_2O$. P.: A yellowish-green gas, easily decomposed. By the application of cold it can be condensed to an orange liquid which explodes on the slightest increase of temperature. Soluble in water, forming.

Hypochlorous Acid, $HClO=52{\cdot}5$.—M.: (1) By dissolving the previous oxide in water. Eq.: $Cl_2O+H_2O=2HClO$. (2) By passing chlorine into water containing calcium carbonate in suspension. Eq.: $CaCO_3+H_2O+Cl_4=CO_2+CaCl_2+2HClO$. P.: A yellow coloured liquid, smelling of chlorine. This acid has a very powerful bleaching and oxidising effect, being twice as powerful as chlorine. It acts on the metals, converting some into oxy-chlorides, others into oxides, and a few into chlorides. Its salts are termed hypochlorites, and the most important is calcium hypochlorite, $Ca(ClO)_2$, the active principle of bleaching powder.

Chloride of Lime, or Bleaching Powder.—This important compound, for which the empirical formula $Ca_3H_6O_6Cl_4$ can be given, appears to be a definite chemical compound, the exact formation of which is not understood. Water decomposes it into calcium hypochlorite, calcium chloride, and hydrate and water. Eq.: $Ca_3H_6O_6Cl_4=CaH_2O_2+CaCl_2+2H_2O+Ca(ClO)_2$. Carbonic acid also acts in somewhat the same way, therefore bleaching powder decomposes if exposed to the air after some time. M.: Lime free from iron and oxides of manganese is burnt and spread out to a depth of about eight inches and carefully slaked with water, about five gallons to each hundredweight. Too little water causes chlorides and chlorates, instead of the bleaching compound, to be formed, and too much water reduces the strength of the product. After being properly slaked, the lime is sifted and spread on shelves in a series of chambers composed of slabs of stone cemented together, and dry chlorine gas is passed over the prepared lime. The chlorine must not be absorbed too fast or heat is developed and chlorate formed. The time occupied varies, for a ton of lime to be saturated with chlorine would take on an average from 36 to 48 hours.

The amount of available chlorine in good bleaching power varies from 35 to 40 per cent.; this is not more than half the chlorine present, as that combined as calcium chloride is quite useless. U.: Largely used as a bleaching agent and also as a disinfectant. U.P.: With gold chloride in toning prints, the hypochlorite being converted into calcium chlorate and metallic gold set free.

Tests for Hypochlorites.—Their solutions bleach litmus or indigo. Dilute hydrochloric acid decomposes them with evolution of chlorine.

Chlorine Trioxide, $Cl_2O_3=119$. M.: By heating arsenious and nitric acids with potassium chlorate, the reaction takes place in two stages, nitrous acid being first formed. Eq.: (1) $H_3AsO_3+HNO_3=H_3AsO_4+HNO_2$. (2) $2HNO_2+2KClO_3=H_2O+2KNO_3+Cl_2O_3$. P.: A heavy yellowish green gas, decomposed by sunlight or if heated to 50°. Can be condensed in a freezing mixture to a reddish mobile liquid of S.G. 1·38, which explodes on warming above 0° C. Five parts of the oxide dissolve in 100 parts of water, forming a yellow crystalline hydrate, which is gradually converted into *Chlorous Acid*, $HClO_2$. This acid forms salts called chlorites, which are crystalline compounds, soluble in water. They are all easily decomposed and have the property of bleaching.

Chlorine Tetroxide $Cl_2O_4=135$. M.: By gently adding strong sulphuric acid to potassium chlorate. Eq.: $3KClO_3+2H_2SO_4=KClO_4+2KHSO_4+H_2O+Cl_2O_4$. P.: A yellow-coloured gas of an aromatic odour. It can be condensed to a liquid and at a very low temperature to a solid. It is slightly soluble in water, and bleaches powerfully; its solution does not form a corresponding acid, but is decomposed by the alkalies, forming a mixture of chlorite and chlorate. It is a very dangerous substance, being liable to sudden decomposition, producing most violent explosions.

Chlorine Pentoxide, Cl_2O_5, and Chlorine Heptoxide, Cl_2O_7, corresponding to the following acids are at present unknown.

Chloric Acid, $HClO_3=84{\cdot}5$. M.: (1) By adding dilute sulphuric acid to baric chlorate Eq.: $Ba(ClO_3)_2+H_2SO_4=BaSO_4+2HClO_3$. (2) By adding hydrofluosilicic acid to potassium chlorate. Eq.: $2KClO_3+H_2SiF_6=K_2SiF_6+2HClO_3$. P.: Colourless, syrupy liquid, with a chloroid smell. It has a strong acid reaction, and exerts a powerful bleaching action. The concentrated acid easily decomposes on boiling, and gives a solution of perchloric acid and evolves chlorine and oxygen. It forms a series of salts called *chlorates*, the most important of which is

Potassium Chlorate, $KClO_3$.—M.: By passing chlorine into a warm, concentrated solution of caustic potash. Eq.: $6KHO+Cl_6=5KCl+3H_2O+KClO_3$. On a large scale it is prepared by passing chlorine through milk of lime (slake lime suspended in water) contained in earthenware vessels fitted with sloping shelves. The chlorine enters at the bottom, and is slowly passed through the liquid, forming calcium chlorate, which is decomposed by potassium sulphate. The potassium chlorate is separated from the potassium chloride by successive recrystallisations. P.: Crystallises in anhydrous six-sided plates; soluble in sixteen parts of cold or two parts of hot water, insoluble in alcohol. On heating, parts with all its oxygen. U.: As a source of oxygen. Largely used in the manufacture of fireworks and lucifer matches, also in percussion caps with fulminate of mercury and other substances. U.P.: In the platinotype process, to increase contrast. *Tests for Chlorates.*—Solid chlorates are decomposed by heat, giving off oxygen or oxygen and chlorine. Warmed with strong sulphuric acid they decompose with a series of explosions (use only a small portion of the salt, and turn the mouth of the tube away from the person). The adulteration of potassium chlorate with potassium chloride can be detected by dissolving in water and adding silver nitrate solution; a white precipitate shows the presence of the chloride.

Perchloric Acid, $HClO_4=100{\cdot}5$.—M.: By the action of strong sulphuric acid on potassium perchlorate. Eq.: $2KClO_4+H_2SO_4=K_2SO_4+2HClO_4$. It can also be manufactured by boiling chloric acid, or by the action of sulphuric acid on the chlorates. P.: It is a colourless, fuming liquid of S. G. 1·78. It is an exceedingly powerful oxidising agent; placed on wood, paper, or charcoal, it at once sets them on fire. It attacks the skin, producing very painful wounds. It combines with water with a hissing sound, producing a crystalline hydrate which is soluble in excess of water, forming a thick oily liquid, boiling at 203° C., and containing 72 per cent. of the acid. Its salts are called perchlorates, and are all, with the exception of the potassium salt, easily soluble in water. This salt is only soluble with difficulty, being one of the most insoluble of the potassium compounds.

Chlorine and Nitrogen.—By the action of chlorine or hypochlorous acid on sal-ammoniac, an oily liquid is formed which explodes with great violence.

(*To be continued.*)

How to Make a Set of Photographic Apparatus.

By H. J.

CHAPTER VII.

THE HAND-CAMERA—(*Continued.*)

In the last chapter we got as far as fixing the plate box on the tapes, and making it work properly; supposing that this is now finished, we will proceed with the next part, the swinging frame L, in which the plates are exposed. This is made up of three pieces as shown in fig. 56, A being the front, through which the plate is exposed, B the middle part open at the top for admission of plate, and C the back, simply a solid piece. We will make A first; it can be made of either wood or ebonite, the latter of course being the lightest, and must be $4\frac{3}{4}$ in. by 4 in. when finished, the opening being $4\frac{1}{16}$ in. by $3\frac{1}{16}$ in., and in the centre both ways. B, which must now be made, is the same size outside, but the opening must be marked out $4\frac{1}{4}$ in. by $3\frac{1}{4}$ in. full, also centrally both ways, and when cutting it out, the marks must be cut through, thus cutting out one side as shown. The thickness of this piece (B) must be a trifle under an eighth of an inch; any thickness of plate will then enter without trouble. The back C will be understood without any explanation. The three pieces can now be glued together and left under pressure until the glue is dry, when a few fine screws can be inserted from each side. The stop P can now be screwed on to division K, just below the slot; the correct place for it is found by measuring the back of the frame just made, and fixing P the same distance below the slot, so that when the frame is resting on it, the two apertures coincide.

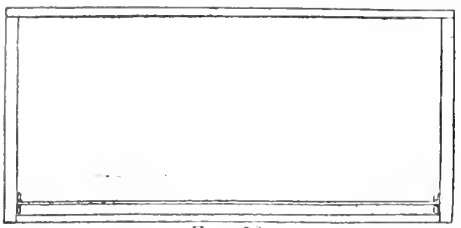


FIG. 53.

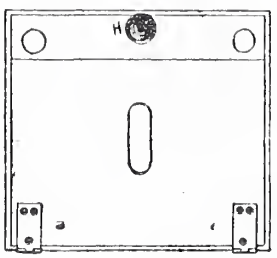


FIG. 54.

Now take the two brass bearings (R), and screw them on back of frame, one at each side, or more correctly speaking one at each end close to the outside edge. The camera must now be marked on the outside, at the exact position of slot in K, and also of stop P, then by standing the swinging frame on end on outside of camera, in the same position it will be in on the inside, when resting on the stop with the open side close to K, and the aperture opposite the slot, the proper place can be found and marked for the spindle which runs through camera and on which the frame swings. This must be marked on each side, and the holes bored through, and a small brass plate let in flush with sides, with corresponding holes for bearings. The spindle itself is formed of a square piece of steel filed round at the ends, and must be long enough to project about a quarter of an inch on one side for the handle to swing frame by, S, fig. 49. This, which can now be riveted on, I make of a small hinge clip, the same as are used for dark slides; the hinge part folding down into a slot made for it, thus holding the inside frame either vertical or horizontal. Before riveting this hinge on spindle, the brass plate for bearing must be taken out of camera and placed on spindle; then the hinge riveted on; the swinging frame can then be placed in camera, and the spindle passed through and the plate screwed to side again, when it will fix spindle in its place. A negative or a plate or two of some kind (quarter-plate size, of course) had better be placed in plate box, and transferred to the exposing frame and back again a time or two, to see if it goes smoothly, which it will do if my instructions have been understood, and followed so far. If it does not, it must be made to do so before going any further, and then, with the frame in a horizontal position resting on stop P, mark where the clip of hinge S comes, and cut a small slot, so that it can be pressed in and so fix it; then turn it up, and cut a similar slot at right angles to the other to hold the plate in position for exposing. These slots must not be cut *through* the side of camera, but only in just far enough for the clip to enter.

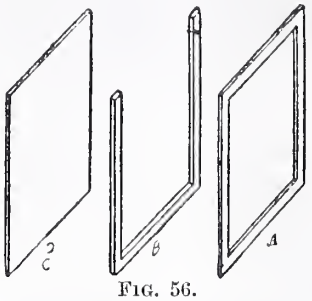


FIG. 56.

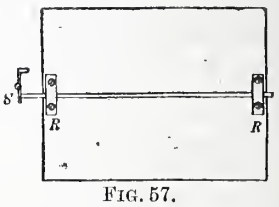


FIG. 57.

The stop M must now be made. It consists of a piece fitted closely between sides of camera, about 2 in. wide and $\frac{1}{4}$ in. thick; and another piece fixed along the middle of it, deep enough to stop the swinging frame; this size can be obtained by measuring the distance that bottom of frame is from bottom of camera, when the former is in a vertical position, and making M about a quarter of an inch higher. If this was only required to stop the plates in one place, it would simply be screwed to the bottom of camera; but as we want it to form a swing-back as well, some other arrangement is necessary. The very simple method which I use is shown in fig. 58, which shows the bottom side of the thin piece mentioned above. As will be seen, a trench is cut out about an inch wide and one-sixteenth of an inch deep. A small hole is made with a bradawl inside of camera close to the bottom to take the end of lever T, and in the other side of camera a slot is cut (also close to the bottom), just large enough for lever to go through, and about $1\frac{1}{2}$ in. long. The middle of this slot and the small hole opposite must be in the centre of M when the plate-holder is vertical, and in a line with these, across bottom of camera, a small centre-bit hole must be bored in the middle, or, perhaps, you will understand better if I say, at an equal distance for each side. Now screw the lever to the wood in the same place as shown in fig. 58, that is just in the middle of trench, and the small end projecting about one-eighth of an inch; then take screw out again, and run lever through the slot inside of camera, place the

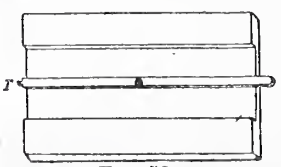


FIG. 58.

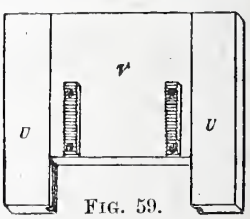


FIG. 59.

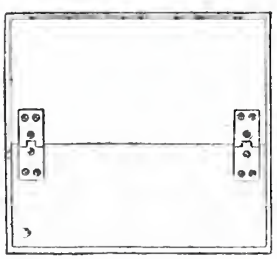


FIG. 55.

piece of wood inside in its proper position, and insert the screw in the same hole as before. It will now be seen that when the end of lever is in the middle of slot inside of camera the plate will be vertical, but by pushing the lever either way, and swinging exposing frame close up to M, a swing-back is formed, so that the camera may be directed either up or down and the plate still be vertical. When using the swing-back the clip outside will not fit into its slot, but must be held firmly while the exposure is made.

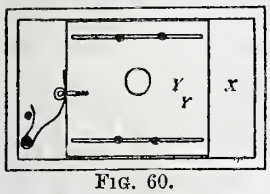


FIG. 60.

We now come to the focussing and rising front arrangement, as it is both together. The focussing is managed in the same way as the swing-back, therefore fig. 58 will serve to illustrate them both, only as the range of focus will be much longer than the other, the bottom piece will have to be 4 in. wide, and the slot in camera side through which lever projects will be 3 in. long; this will give a range of focus from 3½ to 5 in. This part then is understood to be finished, and we will get on with mounting the lens. For this make two pieces as U U, fig. 59, with grooves on the inner edges as shown; screw these on to the bottom piece, already fitted as shown in fig. 47, leaving about 2 in. between them; then screw in a corner piece as at O, to strengthen them and hold them perfectly square. These pieces should be about 4 in. long. Now fit another piece between the above to slide up and down in the grooves; this must be about 3 in. long. On this piece mount the lens and mark round the flange; then take it off again, and box it all round close to the mark, as shown at W W, fig. 47, fixing other two pieces on these so that it is closed in. Now below this box screw on the two short racks as fig. 59, and then place the whole in its place in camera and mark the place for pinion, arranging it so that the lens can be both raised and lowered beyond centre of camera. The pinion will work in a slot inside, as it will slide to and fro as the focus is altered, the light being kept out by means of two brass plates on each side, one being slotted and fixed to camera, and the other working behind it, and being fixed to pinion. This looks a trifle complex on paper, but it is really simple enough when on the bench, as you will find who try it. Fig. 61, which is a section through the camera side and plates, will help to make it clear.

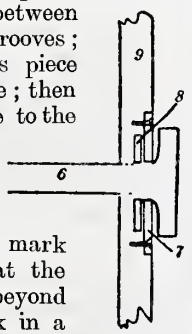


FIG. 61.

We have now arrived at the last part of the inside fittings—the shutter. For this make a piece of one-eighth inch board, the full length of the width of camera inside, and about 3 in. wide; this is X in figs. 47 and 60. Fix a rim all round, so as to make a shallow tray about an eighth of an inch deep, bore a hole for lens opening, then make another piece a little more than half the length inside this rim, and the right width so that it will slide to and fro easily; bore a lens hole in this as well, also make two slots about a quarter of an inch from each edge as shown in fig. 60, Y being the sliding piece; screw in the eye as shown, and fix spring, which is clearly explained in drawing. A piece of catgut must be attached to screw eye, and passed through a small hole made for the purpose inside of camera (or rather through the sliding plate Z, fig. 49, which is screwed to frame of shutter, and covers the slot in camera side), and the other end fixed to the movable part of hinge 1, fig. 49. This hinge is also fixed to sliding plate, so that all moves together when focussing, and the shutter is set by opening hinge, and folding it back towards the front of camera, where it is held by turn-button, a slight push of the latter setting it free and making the exposure. Two small screws must be screwed into X through the slots in Y, to keep the latter in its place. A small bellows body must be fixed to front of shutter frame, so that the front will close up against it and shut out light, and as it is necessary that this should be the case whether the lens is close to front or back as far as it will go, the bellows must be made to spring open. An easy way to effect this is to make a wire frame by winding some spring wire round a square block of the same size as shutter frame, and covering it with black twill; this will always open of its own accord, and yet when needed fold in flat, taking up scarcely any room. If the lens which is to be used has no stops, the shutter can be screwed to the frame W W as shown, but if it has movable stops it must be hinged at the bottom as shown by dotted lines at fig. 48; it will then fold down and leave the lens open for adjustment. The finders can be made next; they will need no further explanation than is given in fig. 62, which is a section, 3 being the lens (any common lens will do), 4 a small piece of silvered glass, and 5 ground-glass. They must be fixed one on each side near the top, the two lens holes show in fig. 54, and the ground-glass opening of one shows in fig. 50, the other of course being on the side for use when the camera is turned side up for vertical pictures. The only fixing they require is a screw through front and top of camera into bottom and back of finder respectively. The front and back of camera can now be made and hinged as shown. The inside of front lid had better be covered with velvet so as to be safe against light entering. It will be noticed that both front and back have a part fixed. The joint must be rabbeted as shown, and the front should have a spring catch, and the back a lock, to insure it against meddling fingers.

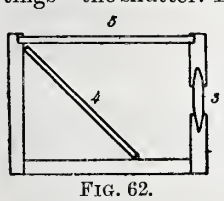


FIG. 62.

The camera is now finished, unless indeed it has to be covered, which is a matter of fancy, and can be done or not. It will make no difference to its utility, though it may make it more of a "detective." We shall also require a handle on top, but neither this nor the covering will present any difficulty to the maker, so I will not take up space concerning them.

I hope my instructions have been sufficiently plain for all to understand, and if so, all who have followed them will be in possession of what may I think be called a "universal" camera. I could have made it simpler by using a roll-holder for films, but I do not like this myself, so I would not recommend it to others, not from any particular fault of its own, but it is more costly, and is harder to manage than plates, so I leave it alone and stick to plates, and shall do so, as I think will the great majority.

I gave a list of all the fittings required in Chapter VI, so there is none to give here, but I will just state that a good material for covering can be bought at 2s. per yard, 45 in. wide; and a handle for the top will cost about 1s.

I feel that this is the most difficult looking piece of apparatus I have described so far, and if there is anything I have not made sufficiently plain, I shall be pleased to explain further, if called upon to do so, through the columns of the AMATEUR PHOTOGRAPHER.

DESCRIPTION OF FIGURES (CHAPTER VII.)

Fig. 53. Method of putting in divisions of plate box.
„ 54. Front of camera.
„ 55. Back of ditto.
„ 56. Parts of exposing frame.
„ 57. Back of ditto, showing bearings and spindle.
„ 58. Bottom part of M, showing lever to work swing-back
„ 59. Rising front.

Fig. 60. Shutter.
„ 61. Detail of pinion for rising front.
„ 62. Section of finder.

REFERENCES TO LETTERS.

A. Front of exposing frame.
B. Middle part of ditto.
C. Back of ditto.
H. Screw to raise and lower plate box.
R. Bearings of exposing frame.
S. Handle to ditto.
T. Lever of swing-back and sliding front.
U. Guide for using front.
V. Rising front.
X. Shutter frame.
Y. Shutter.
3. Ground-glass of finder.
4. Mirror of ditto.
5. Lens of ditto.
6. Pinion of rising front.
7. Slotted plate screwed to camera.
8. Plate fixed to pinion, sliding behind above (7).
9. Camera side.
10. Opening of finder in top of camera.

(*To be continued.*)

Holiday Resorts and Photographic Haunts.

A CAMERA TRIP IN THE ROMNEY MARSH.

By FREDK. GEO. READER.

OF all the sometime seaports which the tide has left high and dry amid smiling meadows and fruitful orchards, the most beloved of artists is the fine old town of Rye, towering red-roofed over the surrounding marshes, and still having steps leading down to the pleasant gardens replacing the angry grey flood or calm blue sea which once lashed her sturdy sides, or quietly lapped against them, as the case might be.



MERMAID STREET, RYE.

From any point of view Rye makes a picture. Three rivers flow on three sides of the town, the Rother on the east, the Brede on the south, and the Tillingham on the west, so that it is nearly surrounded by water. The houses rise in three parallel lines of streets, grass-grown, and crossed by lesser streets and lanes, one above another in picturesque confusion, with the massive steeple and low spire of the ancient church, the towers of William d'Ypres and the grey walls crowning the whole site.

As Rye makes a picture whensoever looked upon, so does it afford a view over the curious region of Romney Marsh, extending from Rye to Hythe, and comprising within the great semi-circle of pasture-land (which was once a bay of the sea, which washed the foot of the ridge of hills beyond the canal) the present townlets of old and new Romney and Lydd, as well as the extraordinary promontory called Dungeness.

Excepting Sandwich, Rye is perhaps the quaintest and most picturesque of our ancient sea-towns; and the streets of old Rye are as narrow, as crooked, and quite as irregular as those of the aforesaid Kentish Cinque Port.

Although all views of Rye itself are very good, perhaps the *best* is that obtained from a queer little ruin called Camber Castle, which lies about half way between Rye and Winchelsea, built by that much-married monarch "Bluff King Hal," originally for the defence of the *coast*, but now standing forlorn and purposeless in the midst of the marshes, with the coast line about two miles distant.

Another fine and panoramic view is obtained from the heights leading to Peasmarsh. Rye has suffered by fire on several occasions, and everywhere are the marks left by the flames. Traces of the conflagrations are easily found in the grand old church, said to be the largest parish church in England, and boasting of an Elizabethan clock, also *said* to be the oldest in England (still going). One cannot but admire the stillness as well as the beauty of this massive edifice. Even the streets of old Rye are marvellously quiet, the stir of business lying nearer to the docks and railway station.

For the amateur photographer in search of the quaint and picturesque, I know of no spot so near London possessing so many attractions as this charming old seaport. There are pretty bits of old-world house building, almost everywhere, round the corners. Mermaid Street particularly contains a charming old house called the "Astrologers' House." Both Mermaid Street and Watch Bell Street are very interesting, and afford a fine view over the marshes.

A few years ago I spent a month at this delightful old seaport, and the weather being favourable, I secured a number of pictures. Although so quaint, it is by no means dull, there is always something to interest. At one time shipbuilding formed a very important and flourishing branch of trade in the port, but of late years it has somewhat declined. The shipbuilders of Rye are still celebrated for modelling fast sailing and smart fishing vessels, a number of which are annually launched.

Of the three "gates" one only remains, the Land-gate, and this stands at the north-east angle of the town.

In the Court Hall are many objects of interest, the remains of the old pillory, the skull of Breede the murderer, and portions of the gibbet chains in which the culprit was hanged, this being, I believe, the last man who wore the chains.

The harbour is formed by a junction of the three rivers, the Rother, the Brede, and the Tillingham, the sea being about two miles from the town. Needless to say that abundance of material is here presented to the picture-maker.

A favourite haunt of mine was at the ferry, and the marshes opposite the ferry. Fishing boats and other craft are always passing up and down the river, and afford good opportunities for shutter work; the town of Rye forming a delightful background. On the opposite height stands Winchelsea, about three miles from Rye. No adjacent towns so similar in position can be so unlike in appearance as Rye and Winchelsea. Here are high grassy acclivities, rising loftily out of the marshes; trees clothe their sides, luxuriant foliage crowns the summit; through the green boughs may be seen, southward, the blue sea with the white-sailed ships; northward the bare lands, laced with a maze of water channels.

Winchelsea was once a fortified town with several gates, of which three remain, the "Pipe Well" or "Ferry Gate," the Strand Gate, and the New Gate. It is now a mere country village, with houses round two sides of the principal quarter, and one small square with a few cottages. Yet how picturesque is the wreck, how venerable are the ruins! One cannot but wonder at this strange desolation.

The chief point of interest at Winchelsea, however, is the church of St. Thomas of Canterbury, of which the chancel with its aisles alone remain. This is very beautiful, early decorated, and may date from about 1300. Near the church are the ruins of the old chapel of the Grey Friars or Franciscan Monastery.

In roaming about Winchelsea one cannot but notice the number of cellars, formerly used for storing the wines of France and the richest wares and merchandise of the Continent. These cellars were once to England what the London Docks are now. They have plain barrel vaults of ragstone, with arched ribs. We descended one of these now used for storing paint. Leading from this were two smaller cellars now used for chopping and storing wood.

A short distance from Winchelsea is the pretty village of Icklesham. The church has a tower with a stunted spire in the centre of the north aisle, and a Norman nave of six bays, and stands among some fine trees, with a large yew on the north

side. Hastings, with its castle and lovely glens, is a paradise for the photographer.

Under the east cliff is found the most picturesque spot. On every side, among a labyrinth of black-timbered store sheds, are strewn anchors and mooring rings red with rust, coils of rope, and heaps of ballast. The boatmen's children play merrily around. Their sturdy fathers, in boots knee high, with striped guernseys or dark blue frocks, are sitting and standing under the lee of their luggers, mending their nets, or tarring their gallant craft. Here indeed are subjects in plenty for the camera or brush.

Pevensey Castle and the village of Westham deserve more than a passing notice; but, having other ground to cover nearer Rye, we must hasten back.

The environs of Rye are rich in subjects for the camera. About half a mile north of Rye is Playden. The church is chiefly Early English. Then about two miles further is a charming village with some of those delightful thatched cottages so abundant in Sussex. In this village lived that loyal gentleman who killed "Jack Cade" near Heathfield, in 1450. Leaving the church on the left, we descend a rather circuitous but pleasant lane to Peasmarsh; near the foot of this lane we come to a homely little hostel, "The Hare and Hounds," and since a long walk has lawfully entitled us to a glass of ale and a moderate luncheon, we cannot do better than rest and refresh ourselves here.

Good malt is made in this district, and the two-peaked "oast" house is seen, as in many other Sussex villages. The village of Peasmarsh lies some little distance further up the road and is very picturesque. The return journey to Rye can be made across country, passing through several lovely hop-gardens; this is one of the most delightful rambles round Rye.

We will now take a run through that dreary and curious region of Romney Marsh. Intersected by dykes and water-courses, almost treeless, and lying at one uniform level, the region of the Romney marshes is hardly attractive, though the vast plain with its gleaming waterlines has its own beauty, and often presents singular effects of light.

The village of Appledore, once on the verge of the great forest of Andred's Wood, and now forming a hilly island on the Romney Marsh, is prettily situated. The Royal Military Canal passes through this hamlet close to the church. Lydd is nearly four miles from the sea.

The church (of which Cardinal Wolsey was once vicar) is cruciform and has a perpendicular tower.

New Romney and Littlestone-on-Sea are easily reached from Lydd, and are well worth visiting. New Romney, formerly one of the principal Cinque Ports, on the western edge of the marshes, is now but a village without any kind of harbour, and, like most of these ports some distance from the sea, it is a dead-and-alive place, with nothing of interest beyond the church. Formerly there were five churches, of which only one (St. Nicholas) remains. This building is very interesting and has a fine Norman tower, which is one of the land-marks of this remote district.

Romney is mainly celebrated for its sheep fair, it being the metropolis of the Marsh district, which extends from Hythe to Rye. Some curious old customs still exist in the town, one of which is the election of the Mayor in the church.

A short distance from New Romney is Littlestone-on-Sea, a very quiet little watering place with a lifeboat station and a fine open sea. There were at the time of my visit only a few houses, but several in course of building. Littlestone is evidently striving to become a popular seaside resort, and it certainly has some claims, as the air is very bracing and the sands are good, but the country round is *awfully* desolate.

I would merely add in conclusion, that anyone desiring a quiet rest and thorough change, free from the noisy gaiety of a popular watering place, could not do better than follow the route here briefly sketched out, making either Rye or Winchelsea his head-quarters, and if favoured with fine weather and a good pair of legs, can roam with the camera in any direction that his tastes and inclinations may lead him, and be sure of reaping a good harvest of quaint and beautiful pictures.

Fallowfield's "Photographic Remembrancer" for August and September is to hand, containing as usual in its twenty pages a list of useful novelties, one of the most striking of which is "Mezzo-type" paper.

TO ARCADIA WITH A CAMERA.—II.

By Lieut. Harvey.

The whole of the neighbourhood I am now writing of is, as far as art is concerned, the storehouse of nature, and Fittleworth (the last place to be dealt with in present paper) in particular. To accomplish the exquisite little tour I shall give here, it is necessary that the photographer should have a few days at his disposal, a good stock of plates, and possessing a good pair of legs not afraid to use them, for often after reaching a certain point he must go the rest of the way by the "Marylebone stage,"* unless he be the possessor of a cycle, or will hire a conveyance—generally in this neighbourhood an extremely old two-wheel cart drawn by a steed the reverse of fiery, broken-spirited, with all the points and angles to be found in Euclid, docile as a lamb, and slow as a tortoise. Apart from these little discomforts, the result will repay a thousandfold any trials and tribulations you may go through prior to reaching the field of extensive operations. It will cost you next to nothing, the innkeepers and country folks here not yet being impregnated with the gold craze and rapid fortunes. Thirty shillings for the week will cover all, unless one is hopelessly extravagant, and even then I doubt whether the resources of the village store would run to the supply of luxurious fare.

To reach this arcadia, book to Steyning (L. B. and S. C. R.), fifty-nine miles from London Bridge. Do not attempt to go and return the same day, for you could never manage it. The result



RYE, FROM THE WATER

would be all hurry, rush, and under-exposed plates. Don't put up at Steyning; good head-quarters can be had further on, and where you will be in the midst of your work. At Steyning you would be seven or eight miles from it. Your road here takes a westerly direction, and you traverse a tract of country remote from railways. Passing through Wiston Park (2½ miles), and Washington Common (4¼ miles), and where you will not then expose a plate unless you arrive early, you reach Storrington (6½ miles), at which place I strongly advise you to make your head-quarters, and can thoroughly recommend the White Horse Inn, where I stayed nearly three weeks, and found clean, cheap, and good plain accommodation. One old man told me that he had never seen a camera until I turned up. During the last five years only three artists have been there, and I strongly suspect they entered into conspiracy, whereby the place has hitherto been sheltered from the rude eyes of the world. It would be utter folly on my part to attempt much description. There is a wealth of beauty, luxurious surroundings, avenues, artistic cottages, glorious views, hills, valleys—in short, all can be summed up in the word of Dominie Sampson, "Prodigious!"

At Fittleworth expose a plate on the church, which stands high. The views from the churchyard are picturesque in the extreme, but from the highest print of Hesworth Common (½ m. W.) there is a superbly majestic scene, and upon which one can well expose half a dozen plates. The whole parish of

* Or is it "marrowbone stage"?

Fittleworth deserves the profoundest attention of the photographer.

At Storrington there is also plenty of work, though not of such an excellent character as that at Fittleworth.

At Washington Common is Chanctonbury Ring, the "mountains" (814 ft.) On its summit is a well-known circular earthwork, now planted with trees, and commanding extensive and glorious views. Many plates may be exposed in this parish, in which there are many lovely spots. Briefly, if the man who does this trip does not meet with happy surprises on every hand, and visit different spots in this neighbourhood pretty often, then I shall be very much astonished, and shall conclude that I know nothing of art, and had better stick to my "sojering."

Apparatus.

THE IMPERIAL "SPECIAL" LANTERN PLATE.

THE Imperial Dry Plate Co., of Cricklewood, London, N.W., have forwarded us a sample of the above lantern plate which they are placing upon the market.

In our hands the plates have given very good results, though we spoiled three before hitting their correct speed, which is greater than any other lantern plate in the market. Notwithstanding the great rapidity, however, the fineness of the image deposit is very good and the gradations satisfactory. The exposure suggested for these plates is about five to ten seconds behind a negative of ordinary density at a distance of 24 in. from a fish-tail burner; and at this distance, with the hydroquinone developer recommended, very rich blacks are obtained. By reducing the distance and the exposure in proportion, and a slight modification of the developer, a very pleasing warm black-brown image was obtained.

The plates yield brilliant slides with good gradation, and good transparency in the shadows, and whilst no one can desire a better plate for contact printing, they will be found of increased value for reducing or enlarging in the camera, from their high sensitiveness.

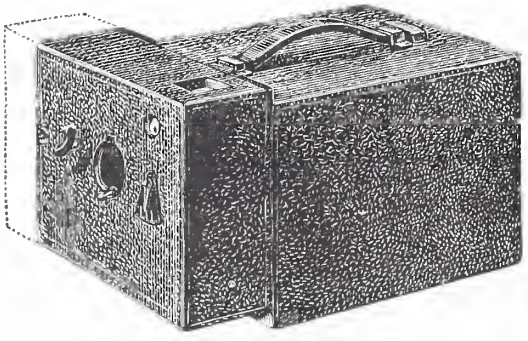
THE IMPERIAL BROMIDE OPALS.

The above firm have also introduced bromide opals which have given also very fine results in our hands. They are of the same rapidity as the lantern plate and are equally suitable for contact printing or enlarging.

We would draw special attention to the prices, which are considerably cheaper than usual, viz., quarter-plates, 1s. 6d.; half-plates, 3s. 8d.; whole-plates, 6s. 6d, etc.

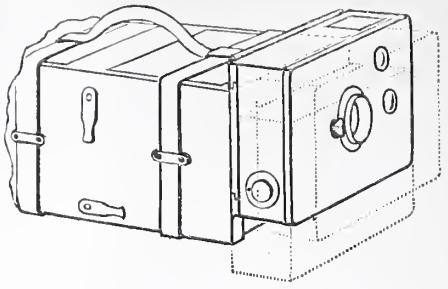
THE CROUCH-DRESSER HAND-CAMERA.

Henry Crouch Ltd., of 141, Oxford Street, W., and 66, Barbican, E.C., has placed upon the market a hand-camera specially designed by Mr. A. R. Dresser, one of the most successful of hand-camerists.



It may be obtained either in plain polished walnut wood, or covered with morocco leather, as shown in fig. 1. It is fitted either with a lens working at *f*/5 or *f* 8, of 5 in. equivalent focus, both the lenses being constructed of the Jena glass. The lens is provided with an iris diaphragm, which is actuated from the outside, and the shutter, more about which we shall have to say in another issue, works between the lenses and from 2 sec. to $\frac{1}{100}$ sec.

A flap falls down at the back of the camera, so that when using the camera on a stand the focussing screen can be used in the ordinary way; and three double dark slides or a roll-holder are provided.



The special feature of the camera, however, is the rising and cross fronts, the action of which is shown in fig. 2, by means of which it is possible to utilise the camera for architectural and ordinary stand work. It is also fitted with two finders and a special focussing lever, and index accurately marked for use when shap-shotting.

We used one of these cameras for nearly a month whilst away for our holidays this summer, and were perfectly satisfied with it.



Taken with the Crouch-Dresser Hand-Camera on a Barnet extra-rapid plate.

The lens covers well, the shutter acts with great ease, and, when required, with high and regular speed; and on a run down the Thames on a steamer we did not lose one shot from movement of the object.

The camera is a capable, well made, and efficient instrument, and has given good results in our hands.

THE CADETT "LIGHTNING" PLATES.

CADETT is almost a household word in plate making and many friends of the old Cadett plate will be glad to welcome the productions of the new firm, CADETT AND NEAL, OF GREVILLE WORKS, ASHSTEAD, SURREY.

The new "Lightning" plate is, we venture to think, the most rapid yet placed upon the market, registering 59 deg. according to Hurter and Driffield's method, and 88½ by Watkins' method of plate speeds, which are fully borne out by our trials. Combined with this great speed there does not seem to be the slightest lack of density-giving power, nor any want of cleanness of working. For hand-camera work these plates should find special favour. Messrs. Cadett and Neal inform us that they have batches of plates which show 62 deg. by Hurter and Driffield's method, and finally have just attained a sensitiveness of 71 deg., which is equal to 106½ in Watkins' P numbers.

The plates are made in two rapidities, "ordinary" and "lightning," and are sold at what are called popular prices. The firm are issuing also a lantern plate, and propose to place a film upon the market.

THE VARIOSCOPIC LENS.

MESSRS. F. DARTON AND CO., of 142, St. John Street, E.C., are placing upon the market Mr. Hugh Blackwood's Varioscopic lens, which consists of an ordinary rectilinear lens with supplementary lenses, both concave and convex, which are fitted near the plane of the diaphragm. It is claimed for this combination that with one rectilinear and the use of certain central lenses plates from 6½ by 4¾ to 18 by 16 in. are covered. We hope to have an early opportunity of trying this and reporting in these columns. Mr. Hugh Blackwood patented his lens in January, 1889.

Catalogues.

WILLIAM TYLAR, High Street, Aston, Birmingham. Price 3d.

Tylar's new catalogue makes a brave show with over 100 pages full of the descriptions of the useful and cheap specialities for which he has become so famous. The illustrations in the work show what can be done with his hand-cameras, which are offered in all varieties. Besides his own goods, Mr. Tylar also offers some of the best known apparatus in the market.

WM. HUME, 1, Lothian Street and West College Street, Edinburgh.

This leaflet is a complete price list of all the sizes of Hume's well-known Cantilever enlarging apparatus, which is now made up to eleven inch condensers. We have already spoken highly of this, one of the most useful of all enlarging apparatus.

Reviews.

Recepte und Tabellen fur Photographie und Reproductionstechnik. By Dr. J. M. Eder. Third edition. Published by Wilhelm Knapp, Halle a/S. Price 2s.

Collections of photographic formulæ and tables have appeared without number in nearly every language during the past few years, but in this little work of Eder's we really have valuable and useful information collected together which it is difficult to find except by laborious search through numerous works. Not only are recent and reliable formulæ given, but the collection of tables is one of the most complete and useful we have yet seen.

How to be a Successful Amateur Photographer. By W. J. Lancaster, F.C.S. Price 1s. Fiftieth thousand.

This little handbook, which is issued by Lancaster and Son, the well-known Birmingham firm, forms a very handy little guide and friend to the beginner, helping him in the choice of apparatus, guiding his footsteps in the proper method of working to obtain successful results, such as shown in the numerous well-printed process blocks with which the work is illustrated.

Virages et Fixages. Traite Historique, Theorique et Pratique. By P. Mercier. Published by Gauthier-Villars et fils, Quai des Grands Augustins, 55, Paris. Price 2f. 75c.

In this little volume we have condensed a mass of reliable information on the subject of toning of great value. M. Mercier, who is a chemist of high repute, treats his subject in a masterly manner, and neither the expert nor tyro should be without this, which will become a standard work.

Annuaire General de la Photographie. Edited by M. Marc le Roux. Published by E. Plon, Nourrit et Cie., 8, Rue Garanciere, Paris.

This, the first issue of a new Annual, promises very well. It gives a list of the principal clubs and societies of France, with a very good summary of the chief progress in photography during the past year. The illustrations are very good, and form by no means the least attractive part of the work.

Congres International de Photographie, Bruxelles, 1891. Published by A. Lefevre, 9, Rue St. Pierre, Brussels.

This volume forms a complete report of the meetings of the International Congress held at Brussels in August of 1891, and contains a list of members, the various addresses given, and papers relating to the subjects on which the Congress deliberated.

Exhibitions.

SOCIETY.	ENTRIES CLOSE.	OPENS.	CLOSES.	ADDRESS OF SECRETARY.
P.S.G.B.		Sept. 26	Nov. 10	The Assist. Sec., 5a, Pall Mall East
Bedford & Dis. Camera Club	Sept. 20	Oct. 11	Oct. 13	W. E. Ison, Hughenden, River Cres., Bedford
East London Photo. Soc. ...	—	Oct. 25	Oct. 25	H. Wilkinson, 28, Shacklewell Lane, Kingsland
Todmorden Scientific Assoc.	—	Nov. 5	—	Jno. T. Binns, 3, Garden Terrace, Todmorden
Hackney Photo. Soc. ...	—	First week in Nov.	—	W. Fenton Jones, King Edward Road, Hackney
Leytonstone Camera Club...	Oct. 25	Nov. 10	Nov. 12	A. E. Bailey, Rose Bank, South West Road, Leytonstone
South London	—	Nov. 24	Nov. 26.	Chas. H. Oakden, 51, Melbourne Grove, E. Dulwich
Exeter Amateur Photo. Soc.	—	Last week in Nov.	—	Rev. J. W Sparshott, Fairfield House, Alphington Road, Exeter

Societies' Meetings.

Belfast (Y.M.C.A.)—Usual monthly meeting was held on 12th inst., Mr. J. E. Pim presiding. Arrangements for the winter's work were discussed, and the programme will include short papers and lectures in addition to lantern displays. The prints in August competition were on view. Mr. Meldon, of Dublin, made the awards as follows: J. McCleery, first, with "Early Spring," a study of sheep and lambs, effectively grouped in landscape amid picturesque surroundings. J. A. Pollock, a very close second, with a whole-plate yachting study, entitled "A Good Start," which has just recently carried off the Silver Medal in the AMATEUR PHOTOGRAPHER Monthly Competition. The picture is an admirable one of the forty-tonners starting at the R. U. Y. C. Regatta last July. Alfred George obtained third place with a view of "The Rustic Bridge," Glenariffe, Co. Antrim. The entries for these competitions maintain a very fair average. The new printing frame by Beck was on view, and seems to be a very handy and useful article. One of the Vice-Presidents (Mr. Robert McCann) is proceeding to India at the end of this month, to take up work in connection with the English National Council of British Y.M.C.A.s in the Presidency of Bombay, and would be glad to receive from those who may be interested in the work a number of their surplus lantern slides, for use in that country, and which would be thankfully acknowledged by him if sent to Belfast Y.M.C.A.

East London—Ordinary meeting held on the 13th inst., the President (Mr. G. S. Pasco) occupying the chair. The Hon. Secretary distributed sample packets of Paget plates and Ilford P.O.P., which will be reported upon at the next ordinary meeting. Mr. Adams was elected a member. Several negatives and prints were shown by the members. The remainder of the evening was spent in discussing various matters of interest to the society. A musical and social evening will be held, in place of meeting, September 27th.

Fairfield.—The ordinary monthly meeting was held on the 13th inst., the chair being taken by the President (Mr. J. L. Mackrell), who, after welcoming the members to the new rooms, proposed a vote of thanks to the various manufacturers who had so kindly sent the fine specimens that decorated the walls. This vote being accorded, he introduced the demonstrator for the evening, Mr. H. B. Sharpe, whose demonstration on "Lantern Slide Making by Reduction in the Camera" proved most interesting, two exposures being made by magnesium ribbon. He also exhibited his new Aptus hand-camera together with several other novelties. Sample packets of plates sent by the Paget Prize Plate Company were distributed to members for trial, and report at a subsequent meeting. Arrangements were also come to in connection with the forthcoming lecture of the club.

Greenock.—The first monthly meeting of the season was held on the 15th inst. The President (Mr. Jas. Graham) gave an address, and expressed the hope that this would be a successful session. The Secretary exhibited a Bynoe printing frame sent by Messrs. Beck, and also laid on the table copies of *Photographic Work*, the *Photographer*, and a large number of catalogues, pamphlets, etc., sent him. He also stated that the Eastman Co. had some time ago sent sample packets of their new chloride paper, and that he had distributed the packets at the time. The members passed round prints, enlargements, and slides, the work of the summer months. It was agreed to have a lantern slide competition, and two or three lantern entertainments during the winter.

Hackney.—On the 13th inst., Mr. W. P. Dando in the chair, Mr

Sodean explained the use of blue glass in the testing of safety of the dark-room light. Messrs. Pollard, Grant, Dean, and Roberts showed work. Mr. Roberts showed some Ilford paper toned with Mr. Welford's bath, and good results were obtained. After a lengthy discussion on the exhibition, it was finally resolved that no member shall be allowed to compete who has not attended meetings at least four times during the last twelve months. Members were advised to send in list of proposed exhibits in order, as they thought best, so that the hanging committee could be guided in selection. Dr. Colquhoun then gave a short demonstration with Amidol. He has used it regularly since August, and was much pleased with it. In cases of under-exposure it was very valuable. Mr. Sodean exhibited a plate he had developed with it. The exposure was $\frac{1}{25}$ sec. on a London street at $f/11$ on a dull day, but it had come out very satisfactorily. Dr. Colquhoun then developed some films, using, on the last done, a solution of chloride of aluminium, which he said hardened the film to such an extent that it could be washed in hot water.

Kendal.—At the annual meeting held on the 14th inst., Mr. Frank Wilson, J.P., in the chair, the following report was unanimously passed:—The Committee, in presenting their annual report, are again glad to note an increase in the number of members over last year. This is the more pleasing when it is remembered that they have been able to record an increase in the membership each year since the formation of the section. Considerable activity amongst the members has been evidenced during the past summer, many members working really hard and attaining good results. The committee look forward during the coming winter to seeing these results being exhibited in some way, and trust thereby that a still further stimulus may be given to the art-science in this neighbourhood. The committee take this opportunity of impressing on members the importance of securing photographs of old buildings, noted characters, and other similar subjects, which cannot fail to become valuable local treasures in years to come. Many of these have been removed within recent years, and regrets are often and freely expressed that no photograph has been taken. Eleven evening meetings have been held during the year; three of these were devoted to lantern slide exhibition, to which the members of the institution were invited. The committee are glad to think that, evidenced by the large attendance, the meetings were appreciated. The committee again record their thanks to the council of the institution for the use of rooms, and to the proprietors of various papers for the free copies sent for use of members. To the Editor of the AMATEUR PHOTOGRAPHER the committee feel especially grateful for many kindnesses, not the least being the loan of slides and competition prints. The Secretary intimated that, owing to press of other business, he was very reluctantly compelled to decline nomination for the ensuing year. The following officers were then elected: Chairman, Mr. Isaac Braithwaite; Hon. Secretary, Mrs. Frank Wilson; Hon. Treasurer, Mr. F. P. Heath; Committee, Messrs. Frank Wilson, Samuel Rhodes, Charles E. Greenall, and the Secretary of Institution (ex-officio). Considerable satisfaction was expressed that Mr. Paul Lange had kindly consented to adjudicate on the print competition. Messrs. T. Salisbury, J. Dixon, and G. R. Hargreaves, jun., were elected members of the section.

Lewisham.—On the 17th inst., Mr. B. Davidson in the chair, Mr. W. C. Chaffey, sen. read a paper on a "Trip to Norway with a Hand-camera," illustrated by lantern slides. The trip was taken with the Polytechnic in the s.s. *Albano*, in June this year. He showed numerous snap-shots of incidents during the voyage, such as Sunday services, deck billiards, and quoits (one slide showed the quoit in mid-air), leap frog, passengers overcome by mal-de-mer, etc. The first port of call was Stavanger, from whence the ship worked in and out the numerous fiords to Trondhjem, coming back again to Haugesund. Fortunately, Mr. Chaffey took his ordinary besides his hand camera, as the inland scenery wanted long exposures in very many cases, besides needing lenses of various foci.

Liverpool (Camera Club).—The usual meeting was held on the 14th inst., under the presidency of Dr. Webb. After the usual preliminaries had been gone through, the Chairman called upon Mr. W. A. Stuart to give his paper on the "Paget Prize Plate Exposure." Mr. Stuart, at a deal of trouble, had tabulated the various exposures, with the light, stop, and exposure given. Mr. Stuart went through this table, and, in an interesting manner criticised each exposure and the results, which on the whole were very satisfactory, though the exposure in some cases varied 100 per cent. The conclusion to be drawn from this, Mr. Stuart stated, was that with the class of plates now made a great amount of latitude is permissible in exposing, if a little care is displayed in development. A general discussion then took place upon the foregoing, and the concensus of opinion was that, to have a real test, the development should be described as well as the exposure, etc. It is proposed to have a club smoking concert on October 12th.

London and Provincial.—A meeting was held on the 15th inst., Mr. E. J. Wall in the chair, Mr. E. H. Fitch was proposed as a member. Messrs. Beck's "Bynoe" printing frame was handed round for examination. A letter was read from the Photographic Society of Great Britain stating that members of the Association being affiliated to the parent Society could purchase tickets for the exhibition at half price. The following question was found in the question box: Whether a bath composed of hypo 4 oz., nitrate of lead 30 gr., alum 2 oz., phosphate of soda 10 gr., and water 10 oz., would give permanent prints. Messrs. Haddon, Evcritt, and Bolas took part in the discussion, and it was generally considered that prints toned in such a bath would not be permanent. The Chairman then introduced Dr. C. L. Mitchell, of Philadelphia, to the meeting, who then gave a brief address upon the printing methods and plates most used in America. Numerous questions were asked by the members, and answered by Dr. Mitchell, and after some further discussion the meeting closed.

Newcastle.—On the 15th inst. the last out-door meeting of the season was held. The party, driving in brakes from Gilsland, visited Bird-Oswald, Coom Craig, Lanercost Priory, and Naworth Castle. The weather was favourable, and a very enjoyable day resulted. Mr. M. Auty acted as leader in his usual thorough manner.

Putney.—Members met on Wimbledon Common on 17th inst., and were favoured with the most lovely weather. Successful negatives were taken of the firing parties at the various ranges, as well as of the golfers, who frequent this fine common in large numbers, and whose characteristic attitudes form excellent subjects for snap shots. At the invitation of Mr. Faulkner, member of Council, the party proceeded to his house at Rochampton, where they were hospitably entertained. The remainder of the afternoon was spent in photographing in the picturesque grounds and fine palm houses, in which latter may be seen some of the most perfect specimens in this country of several kinds of palms, ferns, and mosses. This was the last of the summer outings of the present season, and a worthy finish to the series. The winter season opens on Monday, October 10th, when a social meeting will be held in the rooms of the Society, in the Charlwood Road, at 8 p.m.

Sheffield (Optical Lantern).—The usual monthly meeting was held on the 15th inst., Mr. J. T. Frith, Vice-President, occupying the chair. Objects of interest were handed round, including a new form of photo-micrography, after which Dr. Manton delivered his unique little lecture, entitled "Pictures of Dutch Life," illustrated by lime-light views taken by him during a recent continental holiday. The pictures, numbering between forty and fifty, make a very complete set illustrative of the different phases of life in the Netherlands. The lecture, which was both interesting and instructive, was listened to by a large number of members and friends.

Sutton.—The forty-first meeting was held on the 5th inst., Mr. De Clifford being in the chair. Trial plates, sent by the Paget Company, were distributed among the working members, and a competition arranged for negatives and prints taken by these plates to be exhibited at the next meeting. An enlarged framed picture of instantaneous groups, taken by these plates and sent by the above company for hanging in the room, was shown and much appreciated. A discussion afterwards took place on development, Mr. De Clifford being strongly in favour of amidol, results under his hands proving exceedingly good.

SOCIETIES' FIXTURES.

Sept. 22.—BIRMINGHAM.—"Stereoscopic Photography," by G. A. Thomason.
" 23.—RICHMOND.—Informal Meeting.
" 23.—OXFORD.—Outing.
" 24.—RICHMOND.—Excursion to Richmond and Neighbourhood.
" 24.—BRIGHTON AND SUSSEX.—Excursion to Lewes.
" 24.—HACKNEY.—Members' Lantern Night.
" 24.—S. LONDON.—Excursion to Kew Gardens.
" 24.—HACKNEY.—Excursion to Hampstead.
" 24.—LEYTONSTONE.—Informal Meeting.
" 24.—LIVERPOOL.—Excursion to Birkenhead Park.
" 24.—LONDON AND PROVINCIAL.—Outing to Hadley Wood.
" 26.—NORTH MIDDLESEX.—"The Life of a Dry-Plate," by E. J. Wall.
" 27.—CLEVELAND.—"Development."
" 27.—EAST LONDON.—Musical and Social Evening, 333, Old Street, E.C.
" 27.—HACKNEY.—"A Holiday in the Isle of Man," by W. Fenton Jones.
" 27.—P. S. G. B.—"Apparatus on View in the Exhibition," 5a, Pall Mall East, 8 p.m.
" 27.—BIRMINGHAM.—Social Meeting.
" 27.—LEITH.—Ordinary Meeting.
" 28.—LIVERPOOL.—"Hints on the Manipulation of the Lantern," by T. Edwards.
" 29.—LONDON AND PROVINCIAL.—"A New Gelatine Emulsion for Lantern Slides," by G. T. Harris.
" 29.—WARRINGTON.—Conversazione.
" 30.—RICHMOND.—Show of Prints.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5817. **Platinum Printing.**—Will some of the numerous readers of this paper kindly tell an ignorant one what is the best and simplest platinotype paper to work, and where I can obtain it? Cold-bath preferred.—HARRY.

5818. **Hymn Slides.**—Will anyone tell me how to make a slide with a hymn on it? I have an amateur's camera, but I find when I take a photograph of a small or ordinary print, it is smaller still. How shall I be able to make one with the nice-sized print generally on slides? A lucid explanation will be highly esteemed.—PUZZLED.

5819. **Seaside Exposures.**—Will someone kindly let me know whether seascapes require longer or shorter exposure than others? Staying at the seaside I took some photographs on the same kind of plates (Ilford rapid) and same exposure and same light, but all the sea views were very thin negatives, while the portraits, groups, and houses and other views came out good negatives full of detail.—ARISTOTLE.

5820. **Blacking Stops.**—I should feel obliged by someone kindly telling me if Aspinall's black enamel would do to black stops with, as the tin division in my dark-slides is evidently painted with enamel, and I have had no bad results from them?—ROY.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Sept. 2nd.—No. 5801.
,, 9th.—Nos. 5807, 5808.
,, 16th.—Nos. 5813, 5814, 5815, 5816.

ANSWERS.

5812. **Lantern Screens.**—I have used a transparent screen of tracing linen for a 3 ft. disc, and it answers fairly well. Lately I have been using a 6 ft. transparent screen made of muslin for outdoor lantern work, and I am inclined to think it is the best material of the two for the purpose.—ALFRED WATKINS.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

CAREY.—Your queries are of such a nature as to be inadmissible in our columns, and were unfortunately overlooked last week. You will have seen our report of the camera named in your letter in our issue of last week, and further use of it only confirms our good opinion of it. It is simplicity itself. Of the three lenses you name there is nothing to choose between them; they are all of the same rapidity. Portrait lenses are certainly superior to rapid rectilinear lenses for portraiture; next to the portrait lens comes, as a makeshift, the single landscape lens working at an aperture of *f*/8. The R.R. lenses working at *f*/5 are, however, to be preferred to the single lenses, but are not so good as portrait lenses. If you will use the following solution for your glasses you will find no difficulty in stripping your prints.

Yellow wax	..	..	..	24 gr.
Yellow resin	..	..	..	12 ,,
Benzole	..	..	..	2 oz.

It is possible to enlarge with any lens which is used for taking negatives, and therefore your 7 in. Beck may be used.

CARAPACHAY (Buenos Ayres).—Mr. Henry Park, of 5, Station Buildings, Acton Street, Kingsland, London, N., quotes for quarter-plate camera, as per Major Bruno's articles, 45s., and for 5 by 4, 50s.; this is without lens, shutter, dark slides, and finder.

F. B. JONES (Ontario).—Jabez Hughes' "Principles of Wet Plate Photography," can be obtained from J. Werge, 11A, Berners Street, London, W. Snowden Ward has also written a little work called "The Practical Ferrotyper," price 6d., which may be had from Percy Lund and Co., Bradford.

W. G. GROVES.—We have not the slightest objection to whites or high lights, but the eye can see detail in these high lights which are too often lost in the prints, and we certainly think that one or two of your prints were too hard in the lights. We remember specially some white blouses which were far too devoid of detail. Can you not call and see us and bring some prints up, and we can talk the matter over?

H. P. B.—B camera most certainly. The films may be used to enlarge from direct; all that is required is something to hold them flat. Scanlan's film-holder is the best for this purpose, to be obtained from England Brothers, 21, Charles Street, Notting Hill, W.

J. S. T.—Write to Davenport and Co., 32, Parkhouse Street, Camberwell, S.E., who will do all you want, even if they have nothing in stock to suit you.

G. HARVEST.—Many thanks for your notes.

F. E. C.—The films you name are not quite so rapid as the special plates; they can be developed with hydroquinone. See our note on Cadett's lightning plates this week; we believe they are the most rapid yet on the market.

S. C. L.—We shall be glad to do all we can to help you. We can lend you about 300 slides in all. Let us have a letter for publication on the subject, and we will make a note of it.

G. T. WOODLEY and J. W. WRIGHT.—The fault was partly ours; let us know what particular cuts you refer to, and we will specially mark them and forward.

O'N. F. KELLY.—Your fault lies, we think, in the plates you are using. For each work as you require, you must have a pure bromide or slow bromo-iodide plate; not a chloro-bromide, like the one you now use. We should advise you to obtain some of Mawson and Swan's photo-mechanical plates, and reduce your exposure slightly, not much, but we think Watkins' estimates are rather too long for copying. If you obtain the photo-mechanical plates you can use either a hydroquinone or pyro developer. We should use the pyro, but if you prefer hydroquinone, stick to it.

I.

Hydroquinone	..	..	..	80 gr.
Metahisulphite of potash		..	..	120 ,,
Bromide of potash	..	..	..	5 ,,
Distilled water	..	..	..	20 oz.

II.

Caustic potash, pure	..	..	..	200 gr.
Distilled water	..	..	..	20 oz.

For a normal exposure mix in equal parts.

Stock Pyro Solution.

Metabisulphite of potash		..	..	1 oz.
Bromide of potash	..	..	..	640 gr.
Distilled water	..	..	..	8 oz.

Dissolve, then add 1 oz. of pyro, and make up to 10 oz.

Developer No. 1.

Stock pyro	..	..	..	2 oz
Water	..	..	..	18 oz.

Developer No. 2.

Liq. ammonia '880	..	..	..	1 oz.
Water	..	..	..	19 ,,

For normal exposure mix in equal parts.

Stock Sol. Pyro.

Metabisulphite of potash		..	..	2 oz.
Bromide of potash	..	..	..	240 gr.
Water	..	..	..	8 oz.

Dissolve, and add 1 oz. of pyro, and make up to 10 oz.

Developer No. 1.

Stock pyro	..	..	..	2 oz.
Water	..	..	..	18 oz.

Developer No. 2.

Saturated solution of washing soda.

For normal exposure, mix in equal parts. If you cannot obtain Mawson plates try Edwards' special transparency plates, which have given equally as good results in our hands. Possibly you had better use the hydroquinone, as it is somewhat easier to use, but you must carry development as far as you can without blocking of fine lines. Sometimes it is absolutely impossible to obtain clear lines and sufficient density, in which case the latter is sacrificed, and intensification resorted to. Will you try, and then let us know again. (2) We have been using the Imperial with very fine results; possibly there is no best.

V. W. M.—The prints received for competition are loaned to societies, the members of which, from all accounts, much enjoy looking through them. We retain the prize pictures in order that we may use them for reproduction in a permanent form at the end of the year. It was our custom to print all the details, but as this was suggested to us as being unfair to some makers of plates, etc., we now omit it. Actually there is not much in the particular plate or camera; it is the man who stands behind who works for and gets the medal.

AUSTRAL.—The only remedies we can suggest are the well-known one of weak solution (about 5 grs. to the oz.) of cyanide of potash.

D. W. F. M.—(1) A good subject, and well taken, but spoilt by printing in the sun. (2) The foreground of this wants shading during printing, and it could be improved by some clouds. (3) Utterly spoilt by printing in the sun. (4) Cut off an inch and a half of the uninteresting foreground. All your prints are spoilt by printing in the sun; but for this they would be up to competition standard. Let us see some more work that has not been thus treated.

A. H. DUNCAN.—Thanks for your letter. Try again and see if you cannot come out higher still. You were not awarded a certificate, though the judges pressed us hard to award some more, but we do not want to make them too cheap.

F. G. LLOYD.—Grams is a mistake; it should be grains. Thanks for pointing out the error.

A NEW A. P.—We will send you on pulls of blocks with lettering distinct.

A. CARTER.—The one great fault in your print is hardness: the whites are too white. You will find in our issues of this month a paper by J. McIntosh on "Harmonising Harsh Negatives," which would help you to reduce contrast. But for this hardness the print is a good one, but would have been far better if taken in the shade.

TYRO.—There are no patent rights about a pinhole, although a special form of plate with different apertures is patented. Will you write us in confidence, and let us know your idea, and we may be able to help you.

BOTANY BAY.—The only competitions likely to suit you are our monthly ones.

R. B. WORTH.—Your negative was received broken into two pieces. The usual explanation of these holes or pinholes as they are called is dust on the plate. Before placing the plate in the dish pass a clean soft handkerchief carefully over the surface, and when in the developer rub your fingers, which must be clean, all over the plate. Do you want negative back?

A. HAIGH.—You can obtain the hiconcave lenses from C. C. Vevere, of Market Street, Briggate, Leeds, mounted in wood at 9d. each.

TRIX.—We shall be very glad to have a note on Ely Cathedral for our Annual next year. (1) There is no class below No. 4. All the prints not included in Classes 1, 2, and 3 go in Class 4. (2) The last volume, vol. 15, began Jan. 1st, 1892, and ended June 24th. (3) Rather thin negatives are most suitable for bromide printing, and about 10 secs. will be enough at 18 in.

CATION.—The best thing you can do is to make a V-shaped trough with a very narrow slit running all along the apex, and, filling the trough with the solution, draw it over the paper, or the paper under it, and thus coat it. If you cannot understand, we will forward you sketch on receipt of stamped envelope.

J. P. B.—Your print is rather flat; either the negative is thin and wants intensifying, or else you have been printing in too strong a light. The lines of the tree masses converge too much to the centre, and the figures do not improve it. It is, however, superior to many we get in the competitions.

H. S. P.—(1) Decidedly good, but as you say, printed too dark. (2) A little too hard, the walls of the cottages are too white. (3) The left-hand side of the print shifted, we should say, in the printing-frame—as a whole it is wanting in interest. (4) Overprinted, otherwise a very nice little study. (5) The pink tinge is due to the action of the borax bath which too frequently gives this tinge to chloride papers. (5a) Over-printed and over-toned. (6) Good, though a little too hard.

RUETAMA.—All your slides are slightly over-exposed, and the boats and sheep want clouds to complete the pictures. If you make better slides, they will probably stand a chance.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.*

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

ADVERTISEMENTS *can be inserted under a number the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.**, *or a commission of* **2½ per cent.**, *upon the sale price of the apparatus.*

Background.—Two beautiful backgrounde, 8 by 6, on rollers, interior and exterior, by Redshaw, new, also wall background box for same, very handy for outdoor purposes, accept £2 10s., half cost.—Joseph Smith, Strawberry Bank, Blackburn.

Cameras, etc.—Half-plate camera (Fallowfield), all movemente, Eaetman rollholder, and three slides, 5 guineas; approval; deposit.—Broomhall, St. Margaret'e, Twickenham.

Whole-plate mahogany camera, square bellows, reversing back, two double dark elides, first P.O. 15s. has it.—James, 9, Bessborough Road, Ilford, Essex.

Half-plate Lancaster's 1891 Instantograph, no lens, three double book slides, Lancaster's pneumatic Seesaw shutter, four-fold Cyclist stand, bought last October, hardly soiled, only used a few times, £4 10s. F. J. Thomas, 70, High Street, Deptford, London, S.E.

For sale, half plate Lancaster's Le Meretoire, slide, tripod, quarter-plate carrier, no lens, good as new, 28s.; approval; deposit.—Crozier, Hexham.

Dark-room Tent.—Portable photographic darkroom tent, splendid condition, price £3 10s., cost over £7.—Grant, Aldwick Place, Bognor, Sussex.

Enlarging Apparatus.—Lancaster's enlarging camera, 12 by 10, without lens, aleo disbes.—A, J. Norrington, Purley, Surrey.

Hand-Cameras, etc.—5 by 4 Kodak, equal to new, 30 filme, fitted to hold 100, a bargain, £6 5s.—264, Hainton Street.

Folding Kodak No. 4, splendid condition, price £7 10s.; also portable dark tent, very complete, window shelvee, etc., good condition, cheap, 30s.—Higson, Falmouth Hotel, Falmouth.

Kodak, No. 3 Junior, perfect condition, £6.—Spurrell, 6, Tavistock Place, Plymouth.

B Daylight Kodak and roll of film, cost £3 5s., price £2 10s.—Tonkin, 22, Market Place, Penzance.

For sale, No. 1 eize Kodak camera, with view finder, full spool of the new transparent films, cost £5 5s., price £3 10s.—W. C. Callender, Bonnington Tannery, Leith.

Miller's Adelphi quarter-plate, with 12 sheaths, Optimus R R. lens, Thornton-Pickard shutter, sunk finder and tripod, £4 10s., a genuine bargain.—P. Saunders, 17, Ash Leigh, Anfield, Liverpool.

Kodak, No. 3 Junior, 50 films, unexposed, equal new, cost, with epecial case, £8 15s., price £6 5s.—B., 13, Canterbury Road, Brixton, S.W.

Lenses, etc.—Rapid rectilineals! French make, epecial value, 5 by 4 5½ in. focus, 11s. 6d.; 7 by 5, 7½ in. focus, 14e.; 9 by 7, 11 in. focus, 20s., complete with hood, flange, cap, and eet of Waterhouee etops largest aperture *f*/8; three daye trial allowed.—Dorey' Lester and Co., Kilburn, London.

Crouch half-plate rapid landecape lene, Thornton-Pickard ehutter, 30s., cost 48s. 6d.—Bartlett, 3, Ainslies Belvedere, Bath.

Print Washer, etc.—Jefferies' Patent Perfect washer, as new, cost 16s., will take 10s.; also Marion s United rectilinear half-plate lens (21s. 6d.) for 15s.—No. 335, office of this paper, 1, Creed Lane, E C.

Rollholder.—For eale, Eastman rollholder, half-plate, quite new, 30s.—No. 334, office of thie paper, 1, Creed Lane, E.C.

Sets.—Exchange Lancaster's quarter-plate camera, Ross' lens, two double elides, tripod. Wanted, 10 by 8 combination Multum-in-Parvo.—J. Green, Palfrey, Walsall.

Lancaster's half-plate International camera, Silver Ring R.R. lens, iris diaphragms, three Lancaster's double slidee and three Tylar's metal, four-fold tripod, solid leather, baize-lined case, Optimue finder, focussing cloth, etc., in excellent condition, thoroughly sound, no approval, only wants eeeing, cost over 10 guineas, cash £7.—Thomas, "Lanteglos," Globe Avenue, Enfield.

Quarter-plate camera complete, consisting of tripod lens, shutter, and case; also three dishes, two printing frames, and ruby lamp, cheap.—A. Partington, Molyneux Street, Longsight.

Underwood's Instanto half-plate camera, Ashford stand, five double slides, R.R. and W.A. lens, and complete apparatus for turning out photographe, £8; worth double.—Davies, 22, Market Square, Pontypridd.

Complete set, including Lancaster's quarter-plate camera, tripod, lens, two double slides, focussing cloth, and sundries, in case, 28s., original cost 55s.; Lancaster'e portrait lens, quarter-plate, cost 21e., take 15s., or 40s. the lot.—Glover, Percy Villa, Warwick.

Whole-plate sliding body portrait camera and good lens (Marion and Co.'s), with strong studio stand, the lot £4, or sell separate, or make useful exchange; also half-plate bellows camera, lens, two backs, and tripod, complete, £3.—Chave, 30, Marine Parade, Worthing.

Lancaster's 1891 Instantograph camera, lens, dark slide tripod, and view finder tripod, new a month ago, price 25s. — Apply, M., 15, Endsleigh Gardens, London, N.W.

Bargain! International quarter camera, R.R. and W.A. lens, Thornton-Pickard shutter, time and instantaneous, six double backs, and complete apparatus for turning out photos, take £3, cost double, or exchange good half-plate camera.—D. Travis, St. John's Road, Fazakerley, Liverpool.

Shutter. — Kershaw's instantaneous sbutter, 1½ hood, as new, 8s. 6d.—A. L. Spiller, Hillside, Hampstead Hill Gardens, London.

Sundries.—207 consecutive numbers of AMATEUR PHOTOGRAPHER, clean, no reasonable offer refused.—George Howard, Boston Grove, Rotherham.

WANTED.

Lenses, etc. — Wanted, whole-plate rectilinear lens, for violin, bow, case, and cash.—Sansome, South Beach, Blackpool.

Sets.—Wanted, modern double extension half-plate camera and three double backe, brass bound, witb rapid rectilinear lens and stand, all by first-class maker; also camera case and time and instantaneous shutter; must be in excellent condition. Parti culars to D., Little Berkhamstead House, Hertford.

Shutter.—Wanted, Chronolux or other time shutter to fit 3½ in. lens.—H., 36, Spencer Square, Ramegate.

Bargains in Hand Cameras. — Kodak, No. 4, size 5 by 4, new epool of films, warranted finest condition, in leather case, take £7 17s. 6d., cost £11 7s. 6d; Adame' Ideal hand-camera, twelve quarter-plates, finest rapid rectilinear lene, time and instantaneous sbutter, ae new, £5 15s.; Fallowfield'e Facile, fitted rapid rectilinear lens, carries twelve quarter-plates, as new, £3 17s. 6d. Optimus magazine hand-camera, covered leather, carries 12 quarter-plates, finest Optimus rapid rectilinear lens, two finders, sbutter, etc., as new, take £5 5s.; Talmer hand-camera, carries 12 plates, fine lens, two large finders, time and instantaneous shutters, as new, take 65s.; Steinheil hand-camera, 9 by 12 centimetres, rapid rectilinear lens, two finders, ehuttere, carries twelve platee, bag changing, as new, take £4 10s., cost £10 10s.; Samuel's quarter-plate hand-camera for twelve plates, quite new, rapid rectilinear lens, two finders, take 27s. 6d.; Griffiths' beet quality band-camera, carries six ½-plates, two sunk findere, good lens, pneumatic ehutter, take 30s., cost 42s.; quite new, all above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenball Street, City (late Goy's Medium). Second hand apparatus bought, sold, or taken in exchange. Inspection invited.

Cameras! Cameras! Cameras! Lenses! Lensee! Lensee! and photographic apparatus of every description.—We are agente for all the first-claes makers and can supply any set upon the best possible terme, either for cash, by easy paymente, or by exchange. Every deecription of apparatue taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Liets free by post. Prompt attention, beste discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Roome, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus of every description bought, eold, or taken in exchange. Inspection invited.

Bargains in Lenses.—15 by 12 rapid rectigraph lens, Silver Ring, iris etops, grand definition, take £5 17s. 6d., quite new; whole-plate Voightlander's rapid rectilinear, fine definition, best order, 30s.; whole-plate Optimus rapid landscape lens, quite new, rotating stops, 35s.; whole-plate Lancaeter wide-angle lens, rotating etops, 15s.; 8½ by 6½ Rose rapid symmetrical, Waterhouee stops, grand definition, as new, £4 10s.; Wray's 7½ by 5 wide-angle rectilinear, rotating stops, as new, 47e. 6d.; half-plate aluminium rapid rectilinear, by Parkes, Waterhouse stops, 30s.; half-plate Ross' portable eymmetrical, rotating stops, 4 in. focue, finest order, 45s.; half-plate wide-angle, by Morley and Cooper, rotating stops, as new, 27s. 6d.; half-plate Ross' rapid symmetrical lens, as new, moveable hood, Waterhouse stops, take £3 17s. 6d.; Wray's landecape, Casket lensee, 5 in., 7½ in., and 10 in. focus, iris etops, quite new, take 70s.; Ross' c. d. v. portrait lens, rack and pinion, finest condition, 35s.; Shew's c. d. v. portrait lens, Waterhouse etops, rack and pinion, as new, take 21s.; Optimus 5 by 4 rapid Euryscope lens, by Perken, Son, and Rayment, Waterhouse stops, as new, 47s. 6d.; quarter-plate Optimue rapid rectilinear, by Perken, Son, and Rayment, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.— On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Bargains in Cameras and Sets.—12 by 10 camera, double extension leather bellows, wide-angle movement, double dark slide, fitted fine rapid rectilinear lens and sliding stand, a grand lot, £9 17s. 6d.; Optimus whole-plate camera, leather bellows, revereing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterhouse etops, Thornton-Pickard ehutter, three double dark slidee, three-fold stand and case, £11 5e.; whole-plate Underwood instanto, wide-angle movement, leather bellows, double extension, rapid rectilinear lene, iris stops, fine definition, double slide, half-plate carrier and folding stand, as new, take £5 15e.; whole-plate camera by Hare, grand article, leather bellows, double extension, wide-angle movement, double elide changing box, for 24 plates, all changing slide, Optimus rapid rectilinear lens, Waterhouse etops, brand new three-fold etand and case, take £10 17s. 6d.; 7½ by 5 long-focue camera, by Gotz, wide-angle movement, leather bellowe, reversing back, rapid rectilinear lens, and folding stand, set complete, £5 15s.; half plate Underwood'e Instanto wide-angle movement, double extension, fitted rapid rectilinear lens, slide, and folding etand, £3 17e. 6d.; half-plate camera, by Houghton, all lateet movements, grand article, fitted three double slides, rapid rectilinear lens, and double folding etand, £6 10s.; half-plate 1892 Instantograph camera, all lateet improvements, Instantograph lens, iris stops, shutter, double slide, folding etand and case, take 72s. 6d., as new; Optimus half-plate camera, guaranteed as new, all improvements, three double dark elides, rapid rectilinear lens for views or portraits, three-fold stand and case, take £6 10s.; quarter-plate Lancaster's Merveilleux set complete, 15s.; Lancaster's Convention eet complete, camera, lens, shutter, slide, and stand, as new, 40s.; quarter-plate aluminium Instantograph eet complete, quite new, camera, lens, slide, shutter, and stand, 50s.; quarter-plate Instantograph camera, lens, shutter, elides, and folding etand, 32s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Roome, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

AMATEURS, have your Negatives artistically Retouched. Cartes from 3d., cabinets from 4d.—Stickell's, Midhurst, Sussex.

J. LEIGH, Wardleworth, Artist (Painting and Photography). Copying. Developing, Printing, Enlarging, Portrait Painting. Prompt attention, moderate terms.—High Bank Terrace, Heaton Park, Manchester.

IMPORTANT TO AMATEURS.—Negatives skilfully Retouched. Printed in silver, gelatino-chloride, etc., and Enlarged. Also Developing, Copying, etc.—Terme strictly moderate.—Address, Wilfred Emery, 24, South Street, Baker Street, W.

ENLARGING APPARATUS. – Hume's onlarging apparatus, 5 in. condenser, without objective, 61s.6d.; w th 8 in. condenser, 122s. 6d., carriage paid. —Hume, 1, West College Street, Edinburgh.

THE BOOK OF THE LANTERN.

BY T. C. HEPWORTH, F.C.S.

A Practical Guide to the Working of the Optical (or Magic) Lantern—either as an Educational Instrument, for Exhibition Purposes, or as an Enlarging Apparatus for Photographers. With full and precise Directions for Making and Colouring Lantern Pictures. Price 3s. 6d., post free.

"Here we have something like a lantern manual! A handsomely bound, comprehensive work, written by an acknowledged master in lantern operations."—*Photographic News.*

"Comprehensive, and is characterised by an excellent literary style."—*British Journal of Photography.*

"It is without exception the best book that has been published."—*The Amateur Photographer.*

London: HAZELL, WATSON, & VINEY, LD.,
1, Creed Lane, Ludgate Hill, E.C.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 417. Vol. XVI.] FRIDAY, SEPTEMBER 30, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc, from 10 till 1 o'clock.

Our Views.—The Pall Mall Show — The Result—Number of Exhibits—The Conversazione—The *Times*' Critique—The Critic—Photographs of the Year—G. A. S. and Photography—Annual Lantern Slide Competition—*Truth* and Amateur Photographers.

Chit-Chat, by Chatterbox.

Letters to the Editor.—Isle of Man (Barton Road)—Bromide Paper (Young)—The P. S. G. B. and Reform (Horsley Hinton)—Leytonstone Camera Club Exhibition (Bailey)—Medals at Pall Mall (Spectator)—Film Slides (Turnbull)—A New Use for Solio Paper (Skinner)—Stripping Gelatino-Chloride Prints (Pitcairn Craig)—Another New Bath (Mason)—Amidol (Schultess-Young)—Exposure Meters (Meter)—Eyes Open (Large).

Articles.—General and Photographic Chemistry (Conrad)—How to Make a Set of Photographic Apparatus (H. J.)—Lantern Condensers (Chadwick)—Exhibition at Pall Mall—Hove Camera Club Exhibition—Harmonising Negatives.

Societies' Meetings.—Birmingham — Brechin — Brixton and Clapham—Burnley—Cromwell—Croydon—Eastbourne—Faversham—Hackney—Holborn—Hull—Liverpool A. P. A.—North London—North Surrey—South London.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months,	5s. 6d.	 Twelve Months,		10s. 10d.
Postal Union	,,	,, 6s. 6d	 ,,	,,	13s. 0d.
Out of Postal Union ..	,,	,, 7s. 9d	 ,,	,,	15s. 3d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

Amateur Photographer" Monthly Competition, No. 41.—"Inland Scenery with and without Figures." Latest day, Oct. 24th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, November 11th.)

The suspense of the last month or two is over. The Pall Mall Show is opened, and the result is not general desolation, and a sense of defeat, as was predicted by some. It has been anticipated ever since the fracas of last year that the abstention of some notable workers was inevitable, and prophecies that the wreck or ruck left behind would be lamentable in the extreme were by no means wanting.

But unfortunately, with great fear and trembling at their own audacity, the Council of the Photographic Society of Great Britain did their best, and the result has been—what?—nothing but undoubted success. The "morituri te salutant" has been changed into a pæan of triumph.

We heartily congratulate the Council on the exhibition, and the Hanging Committee on the courage with which they have exercised their rights, as it is an open secret that whereas there are 648 exhibits, exclusive of apparatus, no less than 240 pictures were rejected. Practically we may consider that this "wreck" of a show is one of the most successful which has been held for several years, both as regards numbers and quality.

It was almost ludicrous to hear on every side at the conversazione, "Well, what do you think of the show?" or, "This is the wreck, is it?" "Certainly the best exhibition held for the last few years;" and this last is our opinion. One particularly noticeable feature is the absence of bad work. The general run of the work is certainly high, although there is no picture which may be called "the picture of the exhibition."

The *Times*, which is supposed to rank as the leading newspaper, has naturally reviewed the Pall Mall show, and says:

"For some time rumours have been rife that, in the opinion of many, the society has ceased to fulfil its representative functions in such a manner as to give general satisfaction to the numerous interests with which it is connected, and it would appear that the dissatisfaction expressed has so far taken a practical form as to lead to the abstention of a considerable number of those who have in former years been prominent exhibitors. That abstentions so numerous and of such representative men could scarcely fail to have a marked effect on the general quality of the exhibits, and consequently on the success of the exhibition, need not be said.... The leading points of interest in the exhibition lose, no doubt, considerably from the abstentions to which we have already alluded—abstentions which, among other things, leave almost unrepresented a class of work which has of late years come to the front—we mean

that in which the higher forms of art are applied to photography. Under such circumstances it is difficult to award unqualified praise.

IT is interesting to note the different view here given of the fracas of last year, to that usually accepted. Fourteen exhibitors' work only is mentioned, and some of this is damned with faint praise; but possibly an explanation is to be found in the report that the critique was written by Mr. Maskell, who is one "of a considerable number of those who have in former years been prominent exhibitors," but who this year abstains from showing work. The whole article conveys the idea of a covert sneer unworthy of the columns of the paper in which it appears.

"Photographs of the Year," will, we think, be fully equal this year to that of last. The selection of the pictures was placed in the hands of Mr. A. Horsley Hinton, so well known for his artistic work and writing, and up to the moment of going to press we have received permission to reproduce the following pictures by the following gentlemen:—

"Quiet Life." By Karl Greger.
"The Silver Strand." By Gay Wilkinson.
"Flatford Bridge." By Col. J. Gale.
"The Foot Bridge." By F. P. Cembrano, jun.
"The Love Letter." By A. Burchett.
"Portinscale Bridge, Keswick." By T. M. Brownrigg.
"A Sluggish River, Choked by Sedge and Flag." By George Lamley.

As the edition will be limited, we would ask our readers to immediately send their orders to our publishers, an order form for which purpose will be found on p. v.

THE veteran journalist so well known by his initials G. A. S., gives the following explanation of a fact we have often wondered at, namely, the congregation of professional photographers in Regent Street:—

"I have always thought it to be entirely within the fitness of things that photographers should abound in Regent Street. Ever so many years ago, far down the street, on the east side, was the Daguerreotype Gallery of M. Claudet, a worthy old French gentleman, who flourished as late as the Paris Exhibition of 1867; and in the window of an optician's shop on the west side, close to where is now the establishment of the London Stereoscopic Company, I saw the first photograph on paper that ever greeted my eyes. It was a transcript of a bookcase—the books rendered with that which was then considered to be almost microscopic minuteness of detail; and the photograph, I believe, was one of the earliest emanations from the process simultaneously invented by the Englishman, Fox Talbot, and the Frenchman, Niepce de St. Victor. If that copy of the sun-picture be extant, it must be worth, I should say, a great deal of money."

But surely Fox Talbot and Niepce de St. Victor never simultaneously invented any process. We are afraid that G. A. S. has unfortunately made a slip.

THE Stockport Photographic Society will hold an exhibition next month, which will be confined to members' work only. The exhibits will be shown in the private picture gallery of one of the members of the Society.

WE again warn our readers that our 1892 Annual Lantern Slide Competition closes on September 30th, and that we can allow no extension of time, as the slides will be judged on Monday, October 3rd. by Messrs. F. P. Cembrano, jun., J. B. B. Wellington, and Valentine Blanchard. As previously announced, they will be shown at Pall Mall on the 8th inst., and our prize winners will receive tickets of admission from us.

As amateur photographers we have to bear a good deal, and many sins are laid to our charge. The two following letters appeared last week in *Truth*:—

SIR,—Within the last month or six weeks a plague of appalling dimensions has settled upon this unhappy town. We are invaded by a mosquito-swarm of photographic cameras, accompanied by their manipulators—male and female. No spot is free from them. Nothing is sacred to them. The beach swarms with them. They lie in wait behind bathing-machines, or in the neighbourhood of public bathing-places, and "take" their prey naked and defenceless. The only distinction observed in this direction is that the male photographer usually frequents the female bathing-place, and *vice versa*. Having taken people on the beach with their clothes off, they swarm up into the Lees and take them with their clothes on. They swoop down upon the children as they gambol at the water's edge, or form picturesque groups at the shrine of Mr. Punch. They obtrude themselves upon couples who by their attitudes and their choice of a situation plainly indicate their desire for privacy. They mount the tops of coaches and omnibuses and take snap-shots at people in the streets or at windows. They post themselves in streets or at windows and take snap-shots at the people on the tops of coaches and omnibuses. So little consideration have they for the worst afflictions of their fellow-creatures that they even seize upon points of vantage in the harbour with a view of making pictures of the miserable passengers as they land from the Channel steamers.

In the interests of our town I write to ask if there is no remedy for this state of things. It is fun, no doubt, to the photographer, but to his helpless subject it is death. People don't like being photographed unawares, and in Heaven knows what attitudes. They won't stand it, and if the nuisance is not put down the public will simply take themselves off to the first place which will guarantee their protection against the camera nuisance. Look, too, at the danger to the Channel traffic. Are there not, I ask, sufficient horrors attached to the passage from Boulogne to Folkestone without superadding to them the awful ordeal of being unconsciously photographed as you step ashore in the last throes of your misery? Unless this sort of outrage is stopped with a high hand, the days of this town are numbered, and I hope that you will, by publishing this letter in *Truth*, awaken my fellow townsmen to a sense of the impending danger.—Your obediently, ANTI-CAMERA.

P.S.—I see written up everywhere nowadays "Dark Room for Amateur Photographers." They even put it in hotel advertisements. I never read the words without thinking that I should like to alter it to "Black-hole for Amateur Photographers." Don't you think that would be the best treatment for them?

DEAR TRUTH,—Owing to the cholera on the Continent, Papa has been taking us for a tour through the West of England, and I want to tell you how we have been annoyed everywhere by the amateur photographers with their horrid cameras. You can't get away from them anywhere. At all the famous hills, and rocks, and valleys, and waterfalls, just when you are prepared to go into raptures, you find a camera planted, and a pair of photographers—they always seem to go about in pairs—monopolising the best point of view. We tried in vain to escape from them all through Cornwall, and now that we have come here they seem to be thicker than ever.

It is not their photographing scenery, however, that we object to, so much as their photographing their female fellow-creatures. If you are not very careful, you may get taken at any minute, as an "object" in the foreground of a picture. And the people who carry hand-cameras think it the greatest fun to get pictures of girls in undignified attitudes. Now, if there is one thing more than another that any girl with a well-regulated mind is particular about, it is to look nice when she is having her portrait taken, and it's a horrible thing to think that you may be photographed at any minute without knowing it, with your hair and clothes all anyhow, and yourself perhaps all thrown down in a heap, after a long walk, or a game of tennis, in the belief that no one could see you.

You may say, of course, that nobody who knows you sees these pictures. But how are we to be sure of that? We heard the other day of a lady who was sitting at the side of a rock with a gentleman of her acquaintance in a rather indiscreet attitude, when an amateur photographer took the pair of them. He was so pleased with the picture that he handed it round the smoking-room at the hotel, and showed it, among other persons, to the lady's husband. That amateur photographer has started a divorce case. I hope, dear *Truth*, that you will see what a lot of mischief may be done by these prying cameras, and say a word or two which will keep them in order.—Yours affectionately, MABEL.

The Editor of *Truth* expresses his sympathy, and says he has been deeply touched—an admission at which we are not surprised if he takes these effusions *literatim et*

verbatim as gospel truth, or if he expects his readers to do the same. There is a curious coincidence of the two letters coming together, and, forsooth, he publishes a third letter from a firm of professionals, who, amongst other twaddle, say—

"From inquiries that we have made, we believe that the average turnover of the photographers at Eastgate-on-Sea during the present season is some fifty per cent. less than it has been any previous year. We attribute this exclusively to the competition of amateur photographers, of whom we reckon that there are about 892 in the town at the present moment, photographing everybody and everything they can come across. *Their pictures are vile productions, doubtless,* but many of their plates are developed and touched up by short-sighted firms in London; and, as long as there is a photographer at every street corner and in every house ready to photograph gratis all who will give a sitting, people will not pay to have their likenesses taken, even in the superior style which distinguishes the work of our firm.

"We complain of this state of things as unjust, because the amateur photographer, unlike the professional artist, pays no rent for premises, and contributes nothing to taxation, local or imperial. We are paying at the present moment rates to the amount of 5s. in the pound, house duty, and income-tax upon our trade profits. We maintain that if a rival is allowed to come and take the bread out of our mouths, with the result that we shall ultimately cease to contribute the rates and taxes, it is for the public interest, equally with our own, that he should be taxed at least to the extent we are. With this view we would suggest that there should be a tax upon cameras, collected by means of licences, like shooting or gun licences."

The italics are ours. It is an old cry from the poor wretched pro. who turns out second-rate work, that the amateurs are damaging the trade, although "*their pictures are vile productions, doubtless.*" Surely if the vileness of amateurs' work is so apparent, why is it that professionals have not carried off every medal at Pall Mall this year. The Editor of *Truth* recommends the formation of an anti-camera association, which shall immediately proceed to pass Acts of Parliament, assisted by *Truth*, M.P., of course, which shall tax cameras, make it penal to photograph here, there, or anywhere. Is it the truth that this is the gooseberry season, and that copy was wanted?

East London Phot. Soc.—The Council of the above Society beg to announce that Messrs. E. J. Wall and A. Horsley Hinton have kindly promised to act as adjudicators at the forthcoming exhibition, to be held in the Lecture Hall of the New Tabernacle, Old Street, London, E.C., on Tuesday, the 25th October. Entry forms and full particulars of the "Open Class" competition may be had from the Hon. Secretary, Mr. M. A. Wilkinson, 28, Shacklewell Lane, Kingsland Road, E., on receipt of stamped addressed envelope.

Mr. Van Choate suggests a new form of photometry, in which selenium cells are employed to receive the light rays. The instrument, says the *Electrical Engineer*, is in the nature of a balance connected with a differential galvanometer, the standard light being arranged to affect one side of the balance, and the unknown strength the other. Two lanterns are required, in which the lights are placed, and tubes of these are arranged axially in line. The light to be measured is placed in the right-hand lantern, the standard lamp being in the left-hand. Each tube contains a selenium cell, that in the tube from the standard lamp being adjustable by means of a pinion, and having an index finger moving along the index. Now, taking the right-hand coil of a differential galvanometer, one of the terminals is connected to the zinc pole of the battery, the other to the selenium cell and through the resistance coil to the copper pole of the battery. Similarly, one of the terminals of the left-hand coil is connected to the copper battery, and the other terminal with the adjustable selenium cell and to the zinc pole. The galvanometer can be brought to zero by adjusting the resistance coil. The selenium cells being alike, if the lamps are equal, the distance between the selenium cells and the respective lamps will be the same; if, however, the lamp to be tested is inferior to the standard, the cell facing the standard lamp will have to be moved until the galvanometer shows equilibrium. The difference in the distance between the selenium cells and the lamps is indicated on the scale, and gives the basis for the calculation of the relative intensities of the light of the two lamps, calculations being made according to the law of inverse squares.

Chit-Chat.

This is truly "an age of invention." Mr. Blackwood's accession to the ranks of photography must either have been recent, or his historical knowledge of the art superficial. The alteration of the focal length of a lens by the interposition between its anterior and posterior combination of supplementary lenses has been known and put into practice for many years. Mr. J. Traill Taylor has often advocated the plan, and wrote upon the subject in one of the almanacs, if my memory serves me. Ten years ago I became possessed of such a system of lenses; they bore ths name of Fergusson, though I was not at the time able to trace the maker. Except upon emergency, the method cannot be recommended; from an optical point of view, it spoils a good lens and makes a bad one worse.

I was glad to note that "A. P.," writing recently on amateur emulsion making, in a contemporary, expressed the opinion that most commercial plates would be the better for a more liberal coating of emulsion. Though the demand for a low-priced plate, and the consequent competition, are no doubt the chief factors in bringing into existence the cheap plate of to-day, with its thin smear of emulsion, sadly deficient in silver, such a state of things is greatly to be regretted, for with such materials all-round work of the highest class cannot be done, and I do not hesitate to declare that to this cause alone a large proportion of the indifferent and bad work now so prevalent is due. At the same time the purchaser of cheap plates has no just ground of complaint against the manufacturer, for it is the quantity and not the quality of the emulsion which, in most cases, is at fault. My advice to all beginners is to pay a reasonable sum, and buy a plate which is liberally coated with an emulsion rich in silver, and if the increased outlay is a serious matter let them content themselves with fewer exposures. The gain in the quality of their work will soon manifest itself.

The evils of halation are still deplored; indeed, the matter was recently discussed in these columns. Plate-backing, unfortunately, is by no means a certain preventive, but the substitution of celluloid films for glass plates reduces the defect to a minimum, and of this Mr. Perkins' cathedral interiors in the "Amateur Photographer's Annual" are good examples.

I am sorry to see the feud between Mr. Robinson and the Council of the Photographic Society of Great Britain again renewed. No good to either side can come of further discussion, and the public, I am sure, have witnessed enough hard hitting on both sides. Why should columns of vituperation, recrimination, and abuse of the character indulged in by the disputers be foisted on the readers of the photographic papers?

I cannot help contrasting the respective attitudes assumed by the two men most aggrieved, the one cool, calm, and dignified in silence, the other parading his grievances noisily, and with a reiteration approaching monotony before a bored public, which, I am glad to see, refuses to be cajoled into again joining in the discussion.

Chatterbox.

Camera Fittings.—Messrs. Sharp and Hitchmough, of 101, Dale Street, Liverpool, write to draw our readers' attention to the fact that they have made a speciality of camera fittings for some years; and Messrs. Platt and Witte, of Birkbeck Road, Kingsland, N., inform us that they are making their well-known camera fittings in aluminium as well as brass.

Letters to the Editor.

THE ISLE OF MAN.

SIR,—Having just returned from a holiday tour in the Isle of Man, and knowing the number of your readers who visit this splendid hunting ground for the photographer, I venture to think that it will interest my fellow-workers to know that I found an excellent dark-room and a stock of every variety and mark of plates at Harrison's photographic stores, Walpole Avenue, Douglas. The dark-room is on the shop floor, and they will find Mr. Harrison and his son, who is an excellent photographer, very willing to give them every kind of information, and to show their own series of views of all the most interesting and beautiful scenery in the island.

To those wanting a place to spend a pleasant holiday with the camera, I would advise them to visit the island, which abounds in mountain and valley scenery; and for waterfalls in abundance, besides every variety of shipping, fishing, and yachting, the hand-camera man will find plenty to interest him also.

Locomotion by rail or road is very cheap, and accommodation can be had at 5s. to 7s. 6d. per day—bed and board; no extras. —I am, yours, etc., BARTON ROAD.

* * * *

BROMIDE PAPER.

SIR,—As no doubt at this season of the year many of your readers are making use of bromide paper, both for contact and enlargement, I thought the following hint as to which is the sensitive side might prove useful. I have seen it many times recommended to place the paper upon one's hand, and if it curls upward the top is therefore the sensitised portion, but for amateurs whose hands are frequently hypo stained and sticky I do not think this a good plan. The way I tell is this: Feel across the edge of the paper, and if you can feel the burr left in cutting, that is the right side; since adopting this plan I am never in doubt.—I am, yours, etc., FRANK YOUNG.

* * * *

THE P. S. G. B. AND REFORM.

SIR,—"Chatterboxes" are too often guilty of indiscretion, saying more than they really mean, and, perhaps, after a little deliberation the writer of your "Chit-Chat" column might have expressed himself differently in his paragraph on the P. S. G. B.

Can honest criticism and temperate condemnation of a system of management and organisation already very widely felt to be imperfect, or at least capable of improvement, be justly styled "mud throwing"?

There are those who consider that the principles which govern the exhibitions not only of our National Photographic Society, but of many other leading photographic bodies, are neither in keeping with the modern development of the art, nor just to its latter-day claims, and have had the courage to speak accordingly. Let us at least give such credit for sincerity of purpose, and hope that it may be productive of good. Your writer is good enough to think my suggestions in a former issue are deserving of attention, and agrees that "reform" is "greatly needed." Why then attribute any effort in this direction to a petty quibbling or spitefulness which the not very pretty or original phrase, "mud throwing," would seem to imply?

Let those who think there is or there is not need for reformation lend a hand accordingly, but, considerate of each others views, be wary of entrance to a quarrel as unnecessary as undesirable.

I am ignorant as to "Chatterbox's" identity, but, as I bear him no ill-will, trust he will take no offence at my remarks.—Yours faithfully, A. HORSLEY HINTON.

* * * *

LEYTONSTONE CAMERA CLUB EXHIBITION.

SIR,—In reply to the query of the numerous applicants for entry forms for our forthcoming Exhibition on November 10th, 11th, and 12th next, as to who are the judges? will you kindly announce that Mr. A. Horsley Hinton, Rev. F. C. Lambert, and Mr. E. J. Wall have kindly consented to officiate on that occasion.

Intended exhibitors of apparatus, etc., and those wishing space for stalls, are requested to send in their applications as soon as possible. Thanking you in anticipation, and apologising for taking up so much space in your valuable journal, I am, yours, etc., ALBERT E. BAILEY

Rose Bank, South West Road, (Hon. Sec., Ex. Com.)
Leytonstone.

MEDALS AT PALL MALL.

SIR,—Can you inform an inquisitive enquirer why the medals at the Pall Mall Exhibition are awarded each year to a favoured clique, irrespective of whether their work is best or not? While there are several who are unquestionably fully entitled to the honour that they receive, yet it is difficult to understand why 212, "Frost and Sunshine," should have been selected for a medal, and why a similar set by the same exhibitor should also have been so honoured last year. Several other medal awards are open to the same objection, viz, that there are many far better pictures in the room that receive no recognition whatever.

A second puzzle is why a few men can have eight or ten frames each, hung together, and as nearly as possible in the same position in the room year after year, as though certain spaces were considered the private property of certain individuals, while the work of an outsider is divided up, sets even being broken and fitted in anywhere. Assuming that it is impossible to group all the work of each exhibitor together, it is manifestly unfair to so favour the same special few *each year* at the expense of the majority. On looking through the catalogue I can only find seven names of those who send more than three frames and have them all arranged in consecutive numbers; of these seven, *four are members of Council of the Society*, and another is a well-known exhibitor and medalist.

It is impossible that photographers generally can feel confidence in the good faith of the management of the Photographic Society of Great Britain when the same state of affairs is revealed at every exhibition, especially considered in connection with the very disagreeable incidents last year. One cannot but feel consideration and sympathy for Mr. H. P. Robinson in the treatment he then received from the Society that he had worked for for so many years, and be tempted to ask how far that treatment was due to the jealousy and personal feeling of a certain clique.

A solution of these problems would be very acceptable to your correspondent, SPECTATOR.

* * * *

FILM SLIDES.

SIR,—I am pleased to see your new contributor "Chatterbox," but in his very first paragraph, in which he speaks of light slides for plates and films, he is somewhat unfortunate. As his suggestions have already long been anticipated, it is now getting on for four years since I placed my film slides, which are "capable of holding two films, and should be about half the weight and thickness of an ordinary dark-slide, and the shutter should draw completely out, and finally the film should be held down on all four sides." I enclose you circular, from which you will see that these conditions are fulfilled. These slides were advertised some three years since in both the AMATEUR PHOTOGRAPHER and *British Journal*. I have supplied many dozens to London trade houses, and they have been extensively sold otherwise. In regard to American film slides, the American firm making them very quietly annexed them about two years since (of course with acknowledgement), and are now sending them out as theirs. I have seen several American visitors here with them. I trust it will be some satisfaction to "Chatterbox" to know that these slides are already in the market, and that he will duly acknowledge this in his next communication.—I am, yours, etc., J. M. TURNBULL.

* * * *

A NEW USE FOR "SOLIO" PAPER.

SIR,—Some of your readers may not be aware that by toning Eastman Solio paper in the bicarbonate bath advocated by Mr. Welford, fixing and washing as usual, carefully avoiding the alum bath, and finally immersing for a few minutes in slightly warmed water, the film easily separates from the paper and can be transferred to opal, paper, or any other support desired. Slight enlargement takes place during transference—a half-plate print in my possession, transferred to rough drawing paper, measuring 7⅞ by 5⅝. I believe that you, Sir, in an article on Cresco Fylma published in the AMATEUR PHOTOGRAPHER last autumn, advocated tentatively the transference of gelatino-chloride film to other support by means of that enlarging solution, expressing at the same time a doubt as to whether the film would prove strong enough. I have found the film of the Solio paper all that could be desired in this respect, in fact its toughness was wonderful. If handled with anything like reasonable care, the film is absolutely free from distortion. It should be dried thoroughly, lying perfectly flat, then immersed in the alum bath, washed, and finally dried.—Yours, etc., E. E. SKINNER.

Painswick, Glos., September 26th, 1892.

STRIPPING GELATINO-CHLORIDE PRINTS.

SIR,—As Mr. Forret, judging from his initial remark, is one of those most exceptional individuals—a *rara avis*, in truth—a photographer without even a few spoiled negatives, it is natural for him to prefer a method whereby the support on which the print is dried can be used for ever; but the average amateur, for whose benefit the paper was written, can, I think I may safely assert, supply one spoiled negative for, say, every two dozen prints he wishes to enamel; for, though I recommend this method of finishing for a certain class of photographs, amongst which I would place instantaneous ones, I would by no means advise amateurs to make a habit of finishing their prints in this way; for some photographs, indeed, and especially for portraits, it is most objectionable.

Would that all professionals were of this way of thinking, and that the more artistic matt-surface was oftener adopted for portraiture! But I suppose they have their answer ready, 'twould be "caviare to the general."

To return to Mr. Forret and his criticisms. One piece of glass is, with ordinary care, quite sufficient to enamel at least two dozen prints; I have used the same plate for months, and have never once been troubled with scratches showing on the finished prints, and this is easily accounted for. In the first place, one must not press with all his force when using the knife, or he may, if his knife be extra well tempered, mark the glass, though it is more probable that he will break it; but the knife should be run backwards and forwards along the straight edge till a clean cut is made; and, in the second place, the prints are not, or ought not to be, trimmed till after enamelling, so that, if by any chance scratches should be made on the glass, they fall on the edges that are to be subsequently removed.

Vulcanite is, of course, a different matter, and Mr. Forrest will see, if he refers to my paper, that I mention neither it nor iron as a support for gelatino-chloride prints during enamelling.

My reason for cutting round the print is this: the edges of the backing-paper, being firmly attached to the glass, would, if not separated from the photograph, be almost certain to tear it on an attempt being made to strip it from its support; and the advantage of having the waterproof paper slightly larger than the print is that by this means there is no fear of the photograph curling when dry, and becoming detached from the backing-paper at the edges.—Yours truly, W. PITCAIRN CRAIG.

September 26th, 1892.

* * * *

ANOTHER NEW BATH.

SIR,—May I offer the readers of the widely-circulated AMATEUR PHOTOGRAPHER a new toning bath for gelatino-chloride papers? I have only used it for the Ilford brand, but I daresay it will be found useful for any other make:—

Sodium chloride	64 gr.
Ammonia sulphocyanide	15 „
Gold chloride	2 „
Water	10 oz.

Print slightly deeper than required in finished print. Immerse in toning bath without previous washing. When toned, pass direct to fixing bath (hypo 2 oz., water 20 oz.), and then wash as usual. That is all, and I hope those who try the bath will report their experience.—Yours sincerely,

EDWARD MASON.

* * * *

AMIDOL.

SIR,—Several correspondents who know that I take an interest in matters photographic have written me *inter alia* as to my opinion of the new developer. Messrs. Fuerst Bros. having very kindly sent me a sample of Amidol, I hasten to lay the results of my experience before your readers. For medium speed plates and for bromide papers I consider amidol in many respects superior to pyro, and in all points preferable to hydrokinone, iron, or Rodinal. The use of bromide and the amount of dilution will depend upon the plate and the exposure, but for extra rapid and thinly coated plates amidol is far behind pyro and soda in density and detail-giving properties. It may, however, be advantageously used in conjunction with pyro-soda in the proportion of about one of amidol to five of pyro. This will bring up the image more rapidly, and apparently induces an amount of delicate detail to which density is given by the pyro-soda. As a developer amidol is savage in its action and not greatly under the influence of bromide; in my hands I find yellow prussiate of potash makes a more efficient restrainer, or a few drops of 10 per cent. of citric acid solution, which simply acts by diminishing alkalinity. With the combined developer an ordinary plate may be finished in two minutes. One of the stumblingblocks to improvement of general work among professional photographers is the need of busy men for rapid development, and a curious ignorance of the properties of the chemicals with which they deal. One of your contemporaries holding last week an amateur up to good-humoured ridicule, described him as burning holes in the hearthrug with pyrogallic acid! When such woeful ignorance of the nature of the most used and presumably best known of all photographic chemicals is disclosed in a journal devoted to the interest of the trade, it is not to be wondered at that the professional often remains in darkness regarding elementary principles.

FORMULÆ.

Sulphurous Acid Pyro Stock Solution.

Metalbisulphite of potash (not soda)	1 oz
Pyrogallic acid	1 „
Water	8 „

Dissolve the pyro in the water, and add the potash salt. Shake till sulphurous acid gas can be smelt.

Amidol Stock Solution.

Amidol	2 scruples.
Sulphite of soda	7 dram.
Water	5 oz.

Accelerator.

Pure carbonate of soda (crystals)	2¼ oz.
Water	18 „

Use for normally exposed plates, pyro stock solution ½ oz.; amidol stock solution, 1 dram.; soda accelerator, 4 oz; water, 4 oz., bromide of potash 10 per cent. solution, according to plate, say, ½ dram. My own plan is to have three dishes, a highly restrained, and a strong developer on either side of a normal developer. It is time the one-solution fiend were relegated to the studio of one-batch plates and equal exposures.

I am, etc.,

H. S. SCHULTESS-YOUNG, M.A.

* * * *

EXPOSURE METERS.

SIR,—I have followed the letters and remarks which have recently appeared in your valuable paper with much interest, but from practical experience I must certainly take exception to the remarks of "Chatterbox" in your last issue.

Now, sir, I was just as firm a believer in "judgment and brain" as "Chatterbox," and used to look upon such helps as tables and meters with scorn.

On my recent holiday, however, I was induced by a friend to give one of these instruments "of scientific jugglery" a trial which proved far more severe for the instrument than even I anticipated. I only took two dozen whole-plates away with me, as, on consulting the "Amateur Photographer's Annual," I found that at the various towns I was to visit there were photographic dealers, so I took the trouble to write to them asking if they stocked the plates I use, and on receiving a satisfactory reply felt happy. When, however, I arrived, I could only get the plates I required at one dealer's out of five, consequently I had six different brands of plates, and the only guide to the speed being the list you recently published.

These plates were exposed on all kinds of subjects, from the interior of a cathedral, which took 1½ hours' exposure to some yachts racing. I used the meter in conjunction with the list you published, and out of seven dozen plates I had only two failures, and these were caused by drawing the slide before closing the shutter after focussing.

The negatives are as near perfect as I think it is possible to get them, taking into consideration the various subjects and conditions under which they were taken.

I have always been fairly successful in my exposures, but generally calculate on a certain percentage of failures. I can only attribute my unexpected success to the meter and the table of speeds, "which I find more reliable than the maker's statements." I think if "Chatterbox" were to give the meter an "intelligent" trial, he will find it give the correct exposure in nine-nine cases out of 100.

I am afraid I shall be at once classed as an individual who has not the judgment and brains which are considered so necessary to make a successful photographer. I myself am another "disinterested" correspondent, and know neither the

patentee nor maker of the instrument, or have ever had a communication from them.

I cannot think, after reading the remarks in your paper, but that "Chatterbox" is biased against these helps to correct exposures, which they are undoubtedly are.

I only speak from my practical experience, and the results I have obtained warrant my making this reply.

Apologising for the length of this, I enclose my card, and remain, yours, etc., METER.

* * * *

EYES OPEN.

SIR,—A man of slouchy and shabby appearance, dark hair (but light fingers) appears, to be going his rounds amongst your advertisers. He carries the paper, and asks to see whatever you may have advertised, and while looking at goods, asks if you can throw in anything else. Possibly you turn round to see what else you can oblige him with, when something goes into the pockets of his very roomy frock coat. In this way I have just lost a new drill-chuck, value 10s. 6d., from off my lathe. I have made inquiries and find he is an old stager. His age I should think to be about forty-five. If anybody should have the pleasure of making his acquaintance, please hold him till I come, as I have a lodging prepared for him.—Yours, etc., H. S. LARGE.

General and Photographic Chemistry. — IX.

BY E. C. CONRAD, F.C.S.

THE NON-METALLIC ELEMENTS AND THEIR COMPOUNDS.—(*Continued*).

BROMINE (Br=80).

OC.: Bromine is not found free in nature, but in combination with calcium and magnesium it occurs in sea-water and in the water of many mineral springs, also in seaweed (kelp), sponges, and in many marine animals. A native bromide of silver is also known. M.: Chlorine expels bromine from its combinations with the metals, and the element can be obtained in the free state by taking advantage of this property of chlorine; but bromine is usually prepared by heating one of its salts with manganese dioxide and sulphuric acid. Eq.: $2KBr + MnO_2 + 2H_2SO_4 = K_2SO_4 + MnSO_4 + 2H_2O + Br_2$. It will be seen that this is a similar reaction to that given for the preparation of chlorine. P.: The name bromine is derived from a Greek word signifying a stench, and it is a dark-red poisonous liquid of an exceedingly irritating odour (bromine and mercury are the only elements that are liquids at the ordinary temperature). Bromine is nearly three times as heavy as water, in which it is slightly soluble, one part of bromine dissolving in thirty parts of water. The solution possesses the colour and smell of bromine, and on cooling, a hydrate of the composition $Br_2 10H_2O$ separates out. Bromine boils at 60°, and freezes at −23° to a reddish-black mass. Bromine has a strong affinity for hydrogen, and its solution bleaches by oxidation in the same way, but to a feebler extent than a solution of chlorine. U.: Bromine water is used as an oxidising agent. U. P.: Bromine water has been proposed as a reducer and hypo eliminator; several of its salts are of great importanee, and will be given under the headings of the various metals. *Tests.*—Bromine can be recognised by its colour and smell, and also by causing the reddish-brown vapour to act upon starch paste, when a yellowish bromide of starch is formed.

HYDROBROMIC ACID, HBr = 81.—OC.: The same as given under the heading of Bromine. All native bromides are, chemically speaking, salts of this acid. M.: Bromine eombines with hydrogen, but much less energetieally than chlorine. A mixture composed of equal parts of the gas can be exposed to direct sunlight without explosion, but combine on passing through a red-hot tube, or by the aetion of a series of electric sparks. (2) By passing sulphuretted hydrogen gas through bromine water, sulphur, sulphuric, and hydrobromic acids are produced. Eq.: $2H_2S + 4H_2O + 10Br = S + H_2SO_4 + 10HBr$. The sulphur must be filtered off and the hydrobromic acid distilled from the sulphuric acid. (3) By suspending amorphous phosphorus in water and adding bromine. Eq.: $P + 4H_2O + 5Br = H_3PO_4 + 5HBr$. P.: Hydrobromic aeid is a colourless gas which fumes in the air, and if inhaled produces violent coughing. Under the action of cold it is condensed to a liquid and at a temperatnre of −73° to a solid. Metallic potassium, chlorine gas, and metallic peroxides decompose it; chlorine also decomposes its solution. Hydrobromic acid gas is readily absorbed by water; a solution of 48 per cent. of the acid has a S.G. of 1·49 fumes in the air, and boils at 126° C. This acid combines with metals, forming a series of salts called bromides, which are all soluble in water, with the exception of the bromides of silver (AgBr), mercury (Hg_2Br_2), and lead ($PbBr_2$), which are insoluble. Platinum and gold bromides are decomposed on ignition into the metal and free bromine, which volatilises. Most of the other bromide, are converted into an oxide of the metal and free bromines on heating in air. Potassium and sodium bromides are not decomposed by heat. U.: To make bromides. U. P.: The acid is not employed directly, but potassium bromide is used in emulsion-making, and also as a restrainer in development. *Tests.*—(1) By decomposing a bromide with sulphuric acid and manganese dioxide, bromide is given off, and can be recognised by its colour, smell, and aetion on starch. (2) The free acid or a soluble bromide can be recognised by adding a little dilute nitric acid and a solution of silver nitrate; a yellowish-white precipitate of silver bromide is produced, which is only slightly solublo in strong ammonia solution, but can be filtered off and decomposed by strong hydrochloric acid, when free bromine is liberated.

OXIDES OF BROMINE.—Several of these oxides are presumed to exist, although at present they have not been isolated. The oxyacids of bromine are as follows:—

Hypobromous Acid, HBrO.—M.: By adding mercuric oxide to bromine water. Eq.: $HgO + Br_4 + H_2O = HgBr_2 + 2HBrO$. It is also formed by adding excess of bromine to silver nitrate solution. P.: It is a straw-coloured liquid, bleaches strongly, and decomposes abont 60° C.

Bromic Acid, $HBrO_3$.—M.: By passing chlorine through bromine water. Eq.: $Cl_{10} + Br_2 + 6H_2O = 10HCl + 2HBrO_3$. P.: This is the most important oxyacid of bromine. It has a strong acid reaction, bleaches, and is decomposed at 100° C. Its salts are called bromates, and are all soluble, but the argentic and mercurous bromates dissolve with some difficulty.

Perbromic Acid, $HBrO_4$.—M.: By the action of bromine on perchloric acid. P.: It is a colourless oily liquid more stable than the other acids of this series. All its salts are soluble in water.

The s.s. "City of Richmond," which has made such successful trips this summer to the Norwegian Fjords, is now to make a series of winter cruises to that most picturesque place which has well been named the Garden of Europe, namely, Madeira. Of all photographic paradises this is the finest, and the only regret one has is that photography is unable to reproduce the amazing colours as well as the forms of the innumerable blooms and vegetation which everywhere meet one's eye. The itinerary includes Lisbon, Madeira, Teneriffe, and Grand Canary. Of the comfort and ease on board the steamship, our special correspondent who described so graphically his "Trip to Norway," speaks most highly, and under new management there is not the slightest doubt that the slight hitch which occurred at the starting of the Norwegian trips will not occur again.

How to Make a Set of Photographic Apparatus.

By H. J.

Chapter VIII.

ENLARGING APPARATUS.

Until very recently the use of enlarging apparatus was confined to only a certain class of well-to-do amateurs: the expensive lantern required for artificial-light enlarging, and the necessity of a special room for daylight use, made this fascinating branch of photography quite impossible for us who are not blessed with a large share of this world's goods; and as it is for this class that these papers are intended, I have designed the camera which I am about to describe, for the use of magnesium ribbon, this material being now very cheap, and enlargements can also be made by it without condensers, thus enabling us to enlarge from any size negative without adding to the cost, which, if enlarging from anything above quarter-plate by the old-fashioned way, is considerable.

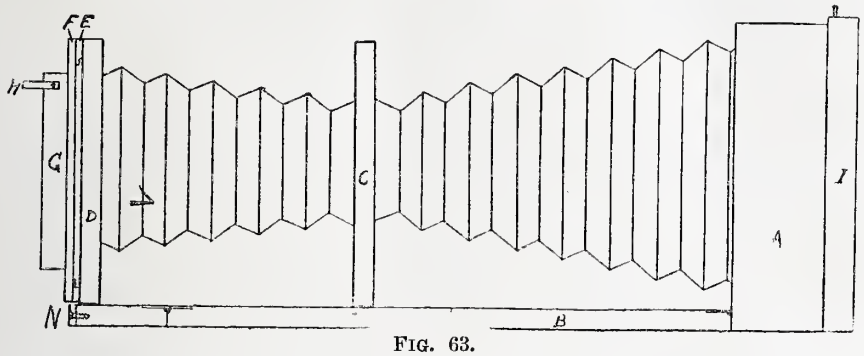


Fig. 63.

Before commencing with the actual making, I will describe the various parts of camera and the method of working them, as this will render good service when I am describing the details of manufacture later on.

Fig. 63 shows elevation of camera, A being the body, B the baseboard, C the middle part which carries the lens, D the main part of front to which bellows are fixed, E the cross sliding front, F the rising and falling front in which negative is placed, G frame to carry ground-glass, which is used to diffuse the light, H brass strip pierced with holes, to which magnesium ribbon is suspended, I dark slide.

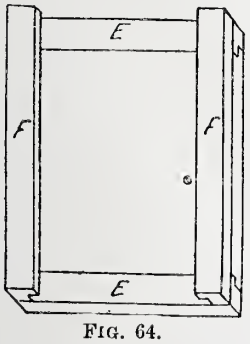


Fig. 64.

The apparatus can be made of any size required, so that I shall not give any exact measurements, as the focus of lens to be used would make a difference; but as a guide I will suppose that we are to use a lens of 8 in. focus, and require to make enlargements up to 19 by 15 in round numbers, or to enlarge three times from half-plate negatives. For this we shall require the body of camera to measure 21 by 16 in., and to open out about 4 ft., therefore it must be understood that where sizes are mentioned hereafter, they allude to apparatus of the above size.

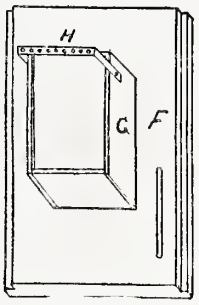


Fig. 65.

To make an enlargement the parts C and D must be moved along the baseboard to their proper distances, and the negative inserted in the rising front F. The focussing screen then being placed in the dark slide, and a lamp behind negative, correct focus can be easily obtained. The sensitive paper can then be placed in slide, and a strip of magnesium ribbon fixed in each hole in H and the shutter of dark slide being drawn out, the ribbon can be lighted strip after strip, and on developing the paper it will be found that each part has been evenly exposed. Of course it will be necessary to use more light with some negatives than others, as it would be with any apparatus, but this can only be found out by experience. By using the rising and cross fronts, any part of a negative can be enlarged from by moving the sliding parts so as to bring that portion opposite the lens.

Having given this short explanation by way of introduction, we will now proceed with the making of camera, which will be easy compared with the subject of the last two chapters. The material should be well seasoned, but any kind of wood will do, even pine if extreme cheapness is required.

The first part will be the baseboard. For this prepare two pieces 4 ft. long, 3 in. by $1\frac{1}{4}$ in.; along one edge of each piece run a groove, as shown at K, figs. 68 and 69, which show sections of these pieces when finished; then from one end for a distance of six inches cut away half an inch in width (see L, fig. 66); these pieces must be fastened together by a piece $1\frac{1}{2}$ in. wide screwed on *top* of them at the cut end (M, figs. 66 and 67), and at the other end by a piece about $\frac{3}{4}$ in. thick screwed on the ends (see N, fig. 63). This completes the outside frame of baseboard. We now want two pieces $1\frac{1}{2}$ in. wide, and 2 ft. long; these are to carry the middle piece C, and must have a tongue on one edge to fit the grooves of outside frame, and a similar groove on the other edge (see section O, fig. 68). These two pieces can be placed in the grooves in outside frame and a piece of wood or brass screwed on the ends as at P, fig. 66, keeping it level with them at both top and bottom. The other ends will be fixed by screwing them to C, but as that is not yet made, a strip should be screwed on top temporarily, to hold them in their place. Another piece can now be prepared, the right width

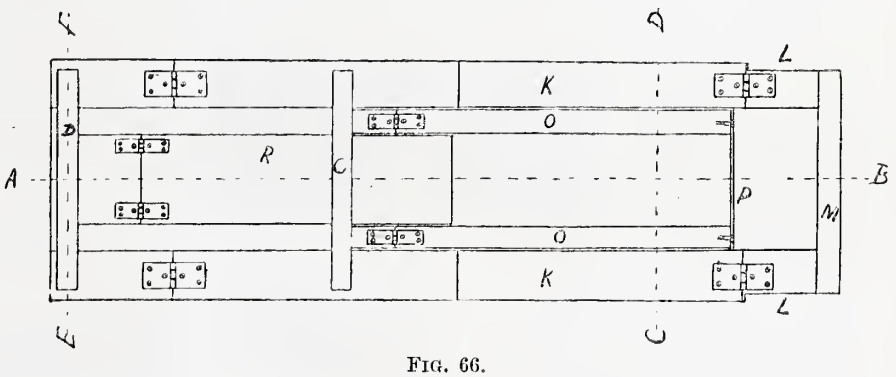


Fig. 66.

to slide between the last two pieces, with a tongue on each edge fitting the grooves in the former, and the same length—that is, 2 ft. This is shown in section at R, fig. 69. To insert this last piece in its place it will be necessary to take off the piece P, which can be fixed firmly afterwards, as it will not have to come off again. The baseboard is now

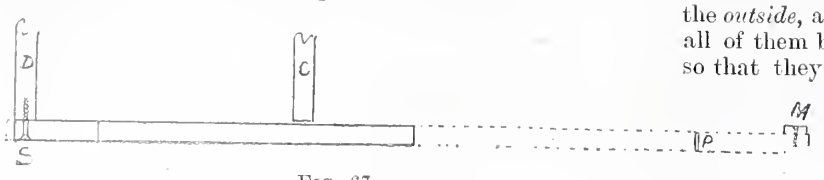


FIG. 67.

finished for the present, and the body can be made. This simply consists of two sides and a top. It can be put together in the same way as I described in the chapter on making cameras, and must be the same width inside as the baseboard is wide at the cut end, the uprights being 22 in. long; all three pieces must be 6 in. wide. When put together, screw the bottom ends of uprights into the baseboard at L L, fig. 66, keeping them exactly upright and square each way.



FIG. 68.

This being finished, the middle piece C can be made. It is a piece of 1 in. board, made so as to just fit easily in camera body; and in the centre each way an opening must be cut about three inches square for the lens; a round hole will do as well if you are the possessor of a bit to bore large enough, but if not, the square hole will be easier to make

The front D must be made the same size, and in the same way; only the hole will be the size of a half-plate. These two parts can now be screwed on to their respective foundations in baseboard, C being screwed to O, and D to R. One screw is shown at S, fig. 67, as fixing D, C being fixed in the same way.

I find that I have omitted one little detail, and I will rectify it at once or it may cause a difficulty later on. It is this: in screwing on the cross piece M, instead of keeping it level with the ends of side pieces, it must be allowed to hang over them about $\frac{3}{8}$ of an inch, for a reason which will be shown hereafter.

The cross front can now be made and fixed to the front D. It does not require much explanation, being simply a rabbetted strip screwed across top and bottom of the front, and a piece fitted between them and held in its place by tongues which fit the aforesaid grooves. In making this sliding piece the grain of the wood should run from top to bottom, not from side to side, or, in other words, the tongues should be formed on the end grain of the wood; the strips will then keep it from warping and twisting, which it would be certain to do if made the other way of the grain.

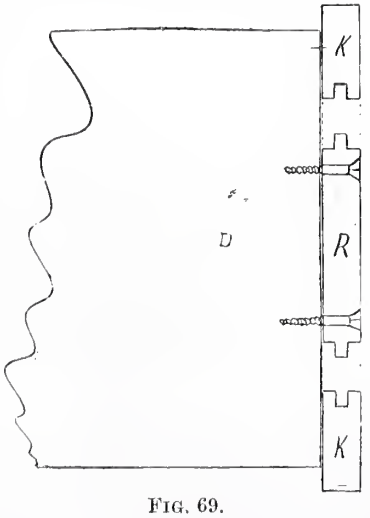


FIG. 69.

The rising and falling front is made in the same way, the above remarks applying to it as well, and the guide strips must be screwed to the sliding cross front as shown by screws, so that the cross front will always carry the rising front with it. Each sliding front will require a hole cut out of it the size of a half-plate, the holes in the two sliding pieces and the main front being cut so as to intersect when the fronts are all level. The rising front must have a small strip of brass screwed across each corner on the *outside*, and a small turn-button top and bottom *inside*, all of them being let in flush with the surface of the wood, so that they will not interfere with the front sliding up and down. They are, as I have no doubt most of my readers have seen, to hold the negative in position, and are better than making a rabbet for it, as the whole negative is available except the extreme corners, while a rabbet cuts off an eighth of an inch all round, which is sometimes wanted in the picture.

A slot must be cut in rising front, and a plug nut inserted in the cross front, so that a milled head screw can be used to hold the front in position; the cross front will keep in its place itself, wherever it is required. Both of the fronts can be made of half-inch board. The frame G must be made and fixed to rising front; it consists of two sides and two ends joined together so as to form a bottomless box 7 by 5 in. inside, and about $1\frac{1}{2}$ in. deep. Before putting it together, a small groove should be run about $\frac{1}{4}$ in. from the edge, and a piece of ground-glass inserted in this groove before nailing the last side on it can then be fixed to the rising front by screwing through the latter from the inside into the edges of the former, keeping the ground-glass farthest away from the front. It will, I should think, be almost unnecessary to say that the frame, or rather box, should be kept at an equal distance all round from the hole in which the negative fits. A strip of brass must now be obtained about 11 in. long, and small holes drilled at intervals of half an inch along the whole length, with the exception of $2\frac{1}{2}$ in. at each end. It must then be bent at right angles through the outside holes, and a small hole drilled through the ends to screw it to the box by; it is shown in its place in fig. 65, which is a perspective sketch of the rising front when removed from its grooves.

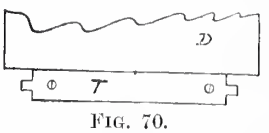


FIG. 70.

It will be noticed that when the front D is drawn out to its full extent, and the middle part C is stopped half-way or thereabouts, there is nothing to prevent D from lifting up and shaking sideways. To remedy this, a piece of $\frac{3}{4}$ in. board must be fitted between the grooves of side pieces, and screwed to the front end of the sliding piece R, which carries the front D. This guide piece (as we may call it) is shown at T, figs. 70 and 71.

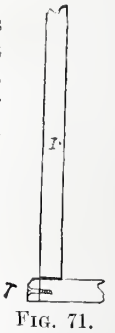


FIG. 71.

As the camera would be an unwieldy article if it could not be folded when not in use, it is necessary to make it to fold up. This I accomplish by hinging the baseboard close up to camera body so as to fold up, then again where the top of body comes, so as to fold down, and yet again so as to fold up. The hinges must first be screwed on in their places, or rather let into their places, as they must be level with the wood and inserted with the round part downwards so as not to interfere with the sliding portions, as they will have to pass over them. After all have been fixed they must be taken out again and the baseboard cut asunder with a fine saw; the hinges can then be screwed on again without any trouble, with the certainty that they will not require any alteration. The baseboard being jointed will not cause the apparatus to be weak when in use, as the sliding parts will stiffen the joints when they

are drawn out, and moreover it will be supported on a table so that it will practically be as firm as though not cut at all. I will now draw this chapter to a close, and in the next the camera will be completed, but as the fittings will be necessary in order to complete it as far as we have got, I give a list below of what is required, with the prices attached, according to my usual plan :—

	s.	d.
3 pair hinges for baseboard	1	0
1 milled-head screw for rising front	0	5
2 brass strips, D, fig. 66, and H, fig. 65 ..	1	0

This is all the fittings yet described; the remainder will be given in the next chapter, in which I shall also show how to make the bellows, as these are the most expensive items. I mention this here so that no one may be deterred from commencing work, as the bellows can be made the exact size to fit in body, whatever size it may be made.

EXPLANATION OF FIGURES.

Fig. 63. Side elevation of apparatus.
„ 64. Perspective sketch of cross front, with guide strips for rising front.
„ 65. Perspective sketch of rising front, with frame for ground glass and brass strip for magnesium ribbon.
„ 66. Plan of baseboard.
„ 67. Section of baseboard on line A B.
„ 68. Cross section of baseboard on line C D.
„ 69. Cross section of baseboard on line E F.
„ 70. Detail of guide piece for front.
„ 71. Detail of guide piece for side view.

REFERENCES TO LETTERS.

A. Camera body.
B. Baseboard.
C. Middle part carrying lens.
D. Front (main part).
E. Cross sliding front.
F. Rising and falling front.
G. Frame for ground-glass.
H. Brass strip for magnesium ribbon.
I. Dark slide.
K. Side-pieces of baseboard.
L. Parts cut away for reception of sides of camera body
M. Cross piece holding K K together.
N. Cross piece front end.
O. Sliding pieces carrying C.
P. Brass strip to fix same.
R. Sliding piece carrying D.
S. Method of fixing D to R, and C to O.
T. Guide strip to front (D).

(*To be continued.*)

Discovery among the Minor Planets.—An announcement comes from the Central Bureau at Kiel for the Propagation of Astronomical Telegrams to the effect that Dr. Wolf, of Heidelberg, picked up a new minor planet on September 13 at 9 h. 57 m. 3 s. (Heidelberg time) in right ascension 23 h. 46 m. 8 s. and North Polar distance 95° 50′, with a daily motion of −48 s. in R.A. and +8′ in N.P.D. It was of the eleventh magnitude. Another planet found by Dr. Wolf on September 17 at 12 h. (Berlin time) (11 h. 6 m. Greenwich time) turned out, on comparison, to be identical with Frigone. It was in R.A. 23 h. 31 m. 8 s. and N.P.D. 95° 8′, with a daily motion of −52 s. in R.A. and +8′ in N.P.D., and was of the twelfth magnitude. The telegram does not state whether these discoveries were made by means of photography, but such is probably the case, as Dr. Wolf has employed this method on former occasions. The planet would betray itself in a photograph by trailing a line on the plate, owing to the fact that it moves relatively to the stars, whose images will be merely dots, the telescope being driven by clockwork so as to follow the stars in their apparent daily motion round the earth. Where photography is not employed the observer laboriously compares all the stars seen in the telescope field with charts specially prepared, showing the stars in the region down to an extreme degree of faintness. If one of these is found to have shifted its place appreciably it must be a planet or comet, since the stars are at such immense distances from us that any motion on their part is dwarfed practically to nothingness.

Lantern Condensers.*

By W. I. Chadwick.

When a beam of parallel light A A (fig. 1) falls upon a convex lens the rays will be bent towards the centre and made to converge approximately to one point *f*, which is called the principal focus. If, on the other hand, a diverging beam of light proceeded from a point at *f* the rays could be traced back—that is to say, they would, after leaving the lens on the other side, proceed parallel to A A.

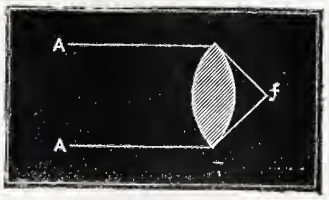


Fig. 1.

If the point of light be brought nearer to the lens than the principal focus *f*, as shown at A (fig. 2), the lens would have too much work to perform to send the rays parallel, and they would proceed from the lens still divergent as B B, though not as much divergent as before they entered the lens.

When the point of light is outside the focus, as at A (fig. 3) the rays on the other side of the lens will meet at some point B (approximately), and if the point of light be moved to B the rays would meet at A; so we see that A and B are reciprocal, and are called the conjugate foci, one having a distinct relation to the other As the point of light A (fig. 3) advances towards *f*, the conjugate B will move away from the lens on the other side, but not in the same proportions as A advances, for the longer focus always moves more rapidly than the shorter. If we assume the lens to be 3 inch focus, the conjugates A and B being equal, will be 12 in. apart or 6 in. from the lens on each side.

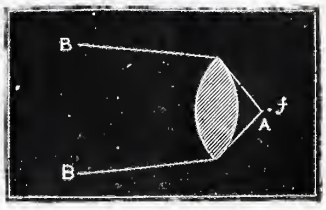


Fig. 2.

In fig. 4 we have caused the point of light A to be brought nearer to the lens than is shown in fig. 3, let us say to 4 in. The conjugate B has moved further away from the lens—to 12 in. (4 in. and 12 in. being the conjugates of a 3 in. focus lens), and if we move the point of light A still nearer to *f*, say to 3½ in, the conjugate B will be found at 21 in. on the other side, and so on as A approaches the lens, B recedes, until at length when the point of light arrived at *f* parallel rays would be produced as shown in fig. 1.

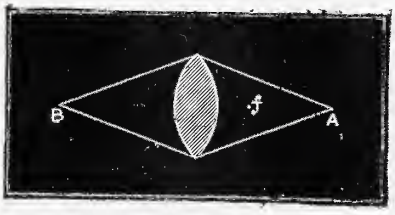


Fig. 3.

Now, let us see how these few remarks apply to a lantern condenser. One important function in a condenser is to collect as much light as possible, and in passing it on through the slide, the rays now forming the picture must converge to a point somewhere in front, and that *somewhere* is in or about the centre of the objective in use—that is to say, the objective must be at B fig. 3, or at B, fig. 4.

When a lantern and screen have been assigned to their respective places, there is only one position for the objective in use to make the picture focus on the screen, and as the conjugate B must meet in the objective, and, as has been shown, this conjugate has another conjugate A, which is the point of light, it is quite clear that the focus of the objective defines the position of the light.

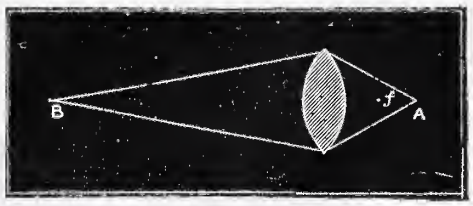


Fig. 4.

If, then, the condenser be 3 in. focus and the objective 12 in. (or such as would require the conjugate B at 12 inches), then the point of light must be at 4 in. from the lens, as shown in fig. 4, but if an objective of 6 in. focus be applied the light must be moved back to 6 in., as shown in fig. 3.

Now the law that "diverging light varies in intensity inversely as the square of the distance," shows clearly that by moving the

* Read at the Stereoscopic Club.

light back from 4 in. to 6 in. we have lost about one half of it, and demonstrates the fact that whatever be the focus of a condenser best suited to a long focus objective, it cannot possibly be near so good—as a light collector—as a shorter focus condenser would be when shorter focus objectives are employed.

There is a limit to the shortness of focus for a lantern condenser on account of the heat given off by the incandescent lime, and when this limit has been reached for use with a short focus objective, the condenser must inevitably break if an objective of longer focus be employed.

Single lenses, such as are shown for simplicity in explanation at figs. 1 to 4, are never used as lantern condensers, for two good reasons, firstly, they would be too thick to stand the heat given off with the light; and, secondly, they suffer from a defect known as spherical aberration, of which we shall have something to say presently.

A biconvex lens of 3 in. focus and 4½ in. diameter would be about 2 in. thick, and would not stand the heat for many minutes.

Now let us see what two lenses will do.

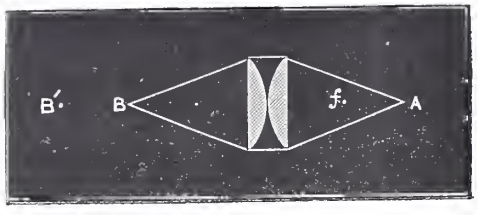


FIG. 5.

In fig. 5 we have two plano-convex lenses, under similar conditions as explained in reference to fig. 1; divergent light from a point A immerges practically parallel, and parallel light falling upon the second lens is conveyed to B; here we have very nearly the same conditions as at fig. 3; but these two lenses, which are each 6 in. focus, are only half the thickness, consequently they are less liable to fracture by heat. If we place the point of light near to *f*, the rays immerging would diverge (see fig. 2), and these diverging rays, falling upon the second lens, would converge to the conjugate B'; but these lenses, being of equal diameters, the second lens would not take up all the diverging rays from the first lens, the marginal rays would be thrown into the mount, and therefore lost, as shown in fig. 6.

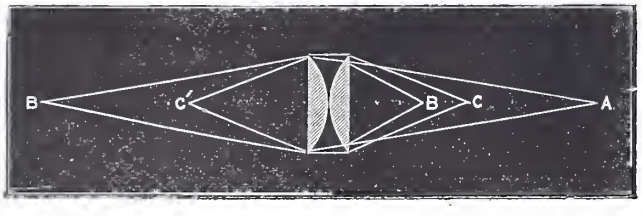


FIG. 6.

Where for a pair of 6 in. focus plano-convex lenses, A B^1 represent the conjugates of the second lens at 12 in. each; C C^1 the conjugates of the pair of lenses, viz., 6 in. on each side; B B^1 the 12 in. and 4 in. conjugates of the pair of lenses, and demonstrates the fact that of a 4 in. diameter front lens only 3½ in. of its diameter is utilised when the 12 in. objective is employed.

If we introduce a third lens, which should be of long foci and consequently very thin, we should be able to get the light within the distance of say 2 in.; this would diverge the rays, and the middle lens would receive the diverging rays and pass them on practically parallel to the last lens, which would converge to the conjugate B, as shown at fig. 7.

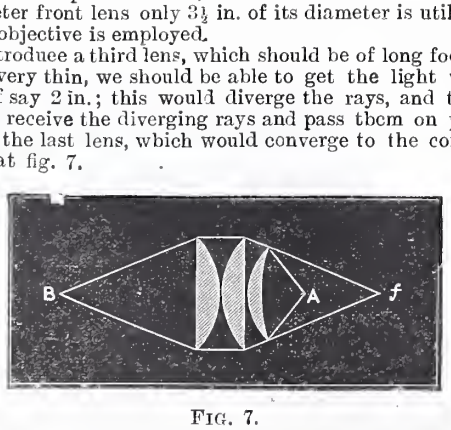


FIG. 7.

The advantage then is that we get a thin lens of suitable focus and diameter close up to the light, and with such a combination as shown at fig. 7 light may be collected and utilised up to an angle of 95 deg., which is not possible with any single or double condenser.

Very early in this communication it was said that rays converged *approximately* to one point; for, as a matter of fact, no single lens having spherical surfaces has the power to converge rays *absolutely* to one point, so that it is not possible by any single lens to obtain an exact focus.

Sir John Herschel has shown that the spherical aberration may be reduced to one-fourth of that of a single lens in its very best form, by means of two plano-convex lenses having their convex surfaces towards each other, and their radii as 1 to 2·3.

But it was Dollond who, over one hundred years ago, first laid down the principle that spherical aberration of single lenses is proportional to the cube of half the angle of the transmitted rays. But, says Dollond, "if two glasses be so proportioned and situated that the refraction be equally divided, then they will each produce a refraction equal to half the required angle, and therefore the refraction being in proportion to the cube of half the angle taken twice, will be but a fourth part of that which is in the proportion to the cube of the whole angle, because the cube of one is but the eighth part of the cube of two, and so the aberration where the two glasses are rightly proportioned is but the fourth of what must inevitably be when the whole is performed by only one lens."

Now, by the same reasoning, where the refraction is divided between three lenses, the aberration will be found to be but a ninth of what would be produced by a single lens, because three times the cube of one is but one-ninth of the cube of three.

To those who have followed what has now been said the advantages of a triple condenser for lantern purposes must be manifest.

The condenser which we now introduce to your notice is a triple combination constructed on the lines here advanced, though the foci of the lenses mentioned to illustrate our remarks are not necessarily those we have adopted.

No reference has been made to the density or quality of glass, or to the various forms of condensers, and some other matters, with a desire not to make this communication too technical.

Exhibitions.

SOCIETY.	ENTRIES CLOSE.	OPENS.	CLO	ADDRESS OF SECRETARY.
P.S.G.B.	—	Sept. 26	Nov. 10	The Assist. Sec., 5a, Pall Mall East
Bedford & Dis. Camera Club	Sept. 20	Oct. 11	Oct. 13	W. E. Ison, Hughenden, River Cres., Bedford
Stockport	—	Oct. 17	Oct. 23	B. S. Harlow, Buchan House, Heaton Norris, Stockport.
East London Photo. Soc. ...	—	Oct. 25	Oct. 25	H. Wilkinson, 28, Shacklewell Lane, Kingsland
Todmorden Scientific Assoc	—	Nov. 5	—	Jno. T. Binns, 3, Garden Terrace, Todmorden
Hackney Photo. Soc. ...	—	First week in Nov.	—	W. Fenton Jones, King Edward Road, Hackney
Leytonstone Camera Club...	Oct. 25	Nov. 10	Nov. 12	A. E. Bailey, Rose Bank, South West Road, Leytonstone
Brixton	—	Nov. 17	Nov. 19	F. W. Levett, 74, Geneva Road, Brixton.
South London	—	Nov. 24	Nov. 26	Chas. H. Oakden, 51, Melbourne Grove, E. Dulwich
Exeter Amateur Photo. Soc	—	Last week in Nov.	—	Rev. J. W. Sparshott, Fairfield House, Alphington Road, Exeter

PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN.

THE Exhibition of the Photographic Society of Great Britain was opened at 5A, Pall Mall East on Saturday last the 24th inst, with a conversazione which was unusually well attended. The guests were received by Captain Abney and the members of the Council.

The judges for this year, as we have already announced, were F. P. Cembrano, jun., W. England, W. E. Debenham, F. Hollyer, J. Traill Taylor, with Captain Abney and Andrew Pringle as scientific experts; and they awarded medals to the following exhibits:—

No. 5. Marsh Idyl.
Quiet Life
Homeward
In the Welsh Mountains
Change of Pastures
Sunset on the Lower Thames
} By Karl Greger.

48. The Estuary of the Blyth
49. A Sunset Calm
50. Westminster.
51. The Peaceful Evening Hour
52. Where Tempests Beat and Billows Roar

} By B. Gay Wilkinson.

67. Salhouse Dyke. By W. Bedford.

79. The Incoming Tide
80. A Cottage Doorway
81. Flatford Bridge
82. Towards Sundown
83. An East Country Quay
84. Afternoon Repose
85. The Corn Field

} By Col. J. Gale.

140. Aylesford. By A. R. Dresser.

143. Blowing Bubbles
144. A Portrait.

} By A. Yeo.

146. A Portrait. By F. Muller.
184. Worn Out. By J. E. Austin.
201. Meadow Sweet. By H. Stevens.
212. Frost and Sunshine. By Mrs. Main.
229. Direct Portraits taken in a Room. By J. Harold Roller.
243. Portrait. By W. M. Warneuke.
250. "Break, break, break, At the foot of thy crags, O sea!" Elliott and Son.
404. Specimen of Work with Dallmeyer's Telephoto Lens. F. Boissonnais.
418. Young England. Autotype Co.
637. Twelve Lantern Slides. E. G. Lee.
692. Standard Lens Flanges. Taylor, Taylor, and Hobson.

It will be noted that an unusually large number of medals have been awarded, and many well-known names figure as prize winners. As we shall comment upon the principal pictures as far as possible, we need make no further remarks at this point.

The Apparatus Section.

The Carlotype Company, of Rainham, Essex, are showing specimens of work on their Carlotype cards, which are ordinary mounts rendered impervious to water and coated with a bromide film for contact printing or enlarging. They have also some very fine examples of printing on mezzotype paper, which is a rough-surfaced drawing paper sensitised for printing out.

J. D. England, of 21 to 24, Charles Street, Royal Crescent, Notting Hill, has some exquisite negatives on celluloid films, which are absolutely faultless as regards the support. To render the use of these easy in ordinary dark slides, Mr. England also shows some of his film carriers constructed of Willesden paper or stout cards, with metal rims at the end to hold the film flat. These are exceptionally light and by no means dear.

J. W. McLellan, of 36, St. Paul's Road, N., shows some very fine stereoscopic transparencies, some of them of quite new subjects.

W. Watson and Sons, of 313, High Holborn, have an improved form of studio camera with axial swing back, side swing, and special repeating back and dark slides, the largest of which is fitted with a jalousie shutter, which is perfection of workmanship. They have also some specimens of their well-known "Acme" and "Premier" cameras with aluminium fittings. The most striking novelty is their studio stand, made of mahogany of solid construction, and so arranged that every movement can be effected from the back. Special arrangements are made for moving the front or back up and down independently of one another or together, and by merely turning over a lever the stand is immediately fixed at the desired spot, or another turn allows it to run smoothly on castors, whilst two milled screws enable it to be levelled on uneven floors.

"Nameit," of 44, Snow Hill, E.C., have complete founts of this useful invention for naming negatives and prints, showing specimens of titles done with the same.

W. Sanders, of 91, Mount Pleasant, Liverpool, is showing a combined field glass and detective camera, which enables any object to be followed with the absolute certainty of getting just what one requires. It is fitted with a roll-holder, and may be used as a field, opera, marine, or night glass as desired, besides its photographic uses. We were informed that improvements are in course of being carried out which will considerably lessen the weight, which is at present rather great.

H. Crouch, Ltd., of 66, Barbican, E.C., have an exhibit of the Crouch-Dresser hand-camera, which was noticed in our columns of last week.

J. H. Smith, of Nelson House, Stroud, Gloucester, has an adjustable vignetting frame possessing several new features, and which strikes us as being a thoroughly practical article.

H. Cooper (Morley and Cooper), of 70, Upper Street, Islington, N., shows a half-plate long-extension camera, with aluminium fittings, which is also adjustable for use with lenses of short focus, the back sliding forward towards the front. The dark slides are fitted with patent spring locks. The whole is well made and would form a very efficient set for any amateur.

Smith and Son, of 102, Parade, Leamington, exhibit their plate washer, the special features of which are that the films are placed face downwards, and the tank is emptied once in every five minutes, thus ensuring complete elimination of the hypo in a very short time.

A. J. Smith and Co., of 18a, Cloudesley Square, Islington, N., show dark slides fitted with their patent shutter springs, which effectually prevent the accidental opening of the slides.

W. Goode, of Thorne Lodge, Mulgrave Road, Sutton, has a very convenient self-adjusting tripod head.

Newton and Co., of 3, Fleet Street, E.C., exhibit two oak stands fitted with Elmer's new levelling head constructed of aluminium, and also an aluminium stand complete, which is very light. Elmer's new head, which is something similar in action to a ball and socket, allows the camera to be levelled most accurately without shifting of the legs.

J. R. Gotz, of 19, Buckingham Street, Strand, has a very good show of shutters, both for stereo and ordinary working, all of which are constructed of metal, and work very smoothly and well. Besides these, one of his patent central swing cameras with aluminium fittings. Gotz's changing box for films, which carries two or three dozen, and in which changing could be done in daylight, is well worth the attention of all film workers; it is easy in action and by no means heavy. Mr. Gotz also shows single and double slides, and an Atlas tripod with turntable in aluminium.

Geo. Houghton and Son, of 89, High Holborn, E.C., exhibit three of their well-known Shuttle hand-cameras, and work done by the same. An interchangeable leaf album and a revolving vignetter, a table on which printing frames are placed, and the whole then revolves by clockwork, ensuring evenness of vignetting. Houghton's Photo-ehromoscope also attracted a good deal of attention. In appearance this is like a retouching desk, and prints, cut out in outline, and rendered translucent, are placed on the sloping desk and by means of suitable reflectors placed behind, which can be manipulated by cords, some charming results are obtained. This firm has also a very good field camera, the "Holborn," of good workmanship, light, and rigid.

Archer and Sons, of 43, Lord Street, Liverpool, show one of their Ideal optical lanterns, with interchangeable lenses and celluloid dissolver, which, whilst it never actually darkens the screen, gives the effect of dissolving and automatically changes the slides.

Adams and Co., of 81, Aldersgate Street, and Charing Cross Road, W.C., are showing a whole series of their hand-cameras—the Adams, Ideal, Vesta, and Hat, besides an aluminium Club camera, patent changing boxes, adjustable shutter, and lightning stand. All these are enclosed in a glass case, on the top of which are three of their Pantoscopes for viewing lantern-slides.

R. and J. Beck, of 68, Cornhill, E.C., have a very fine show of their Autograph lenses in brass and aluminium, as well as the new detective lens which they are placing on the market. The Frena hand-eamera, and results obtained by it, are well to the front, and the small and large working models of the ehanging apparatus attracted a good deal of attention. The Bynoe metal printing frame and celluloid well dishes complete this firm's exhibit.

Taylor, Taylor, and Hobson, of Slate Street Works, Leicester, have a complete set of their standard lens flanges, and this is the only apparatus exhibit which gains a medal.

J. Swift and Son, of 81, Tottenham Court Road, have a case full of their famous Paragon lenses, both in brass and aluminium fittings.

The Pictures.

The time mark in the Photographic calendar for 1892 has been reached. The last Saturday in September, immutably fixed—like the laws of the Medes and Persians—for the opening conversazione, and looked forward to so eagerly by those interested in the advancement of photography, has come and gone, and the doors of the gallery at Pall Mall are once more open to the general public. Time was when outside the Photographic Society itself little interest was excited by this event, and the *Times* only occasionally took the trouble to review the Exhibition, whilst among the rest of the daily papers only a few gave notiees, and these frequently of the briefest character. For many years past, however, all this has been changed. The amateur is omnipresent, and there are few well-to-do families where, through the distinguished photographic performances of at least one member of the household, there is not a strong and special interest in the great event of the year.

This year the interest is strongly accentuated by rumours of various kinds. Among others, that, through differences arising out of the Exhibition last year, there would be, as in Paris, two salons, and that as a natural consequenee the one in Pall Mall would be considerably weakened. On looking round the walls of the gallery one sees with regret that the work of many distinguished workers is conspicuous by its absence, but it must be frankly admitted that, in spite of this much to be regretted circumstance, the Exhibition is fully up to the standard of last year.

The walls are not nearly so crowded with pictures, and there is no necessity to go on hands and knees in order to see the unfortunates which were in former years degraded to the floor level, for this year there is only one row below the line of honour. In spite, however, of the limited number of photographs, there are still far too many totally wanting in interest, and with no merit to warrant their appearance on the walls of even a local show of photographs, and still less so on those of the representative exhibition of the year.

There are only two screens, and therefore the principal wall is much more open to view. The rostrum for the lantern is a great eye-sore, and makes one end wall a most unenviable position for pictures.

In entering the gallery the eye is met by a picture so monstrous in proportion that it appears to crowd all the other pictures away in every direction. To still further increase this defect, small pictures have been placed in its immediate vicinity; and, to crown all, the crude blue-green colour of this colossal production, with its heavy dark frame, kills all the other pictures on the main wall of the gallery. The first impression of them is that they are faint and washed out, and it is only after a closer inspection that anything like justice can be done to them. This very conspicuous picture is a wave study, and not a word can be said against the original negative from which this immense enlargement (7ft. long) has been made. It is probably one of the finest of its kind, and Mr. Birt Acres is to be complimented for his determination and pluck, for only this and the artistic eye to see the happy moment for the instantaneous shot could make such a success possible. Let anyone who may doubt the truth of this attempt to place his camera on slippery rocks with a gale blowing great guns, and the sea spray every moment dimming the brightness of his lens, and he will soon find his convictions put in the right place. When all this has been said, however, the enlargement is so out of proportion to all the other pictures in the Exhibition, that in justice to them it should have been placed on an easel by itself. Of course, it will be considered by the general public the picture of the year, for they will not find out that this immense size is secured by making it in four pieces and joining it up afterwards.

We are compelled to say so much about this picture because it is so misleading, and, striking as it is, its exhibition does not tend in any way to the advancement of the art side of photography.

Whilst on this subject, has not the time come when the whole question of frames and mounts should be taken in hand and seriously considered? It is true that on walking round the gallery one must admit that examples of eccentricity or vulgarity in framing are fewer than in many past years, and that the hanging committee have insisted upon covering up any vulgar labels that take the form of advertisements; still there are many pictures that injure their neighbours by the crude colour of their mounts. Now that bromide, platinum, and carbon are so much to the front, a more uniform system of mounting might be adopted with great advantage. Let anyone interested in this important question examine the pictures of Cembrano and Gale, and they will see that these productions do not owe their artistic effect to any trick in either mounting or framing. A lesson might be taken from the Water Colour Society. In the winter exhibition, devoted mainly if not entirely to sketches, plain white mounts are only used, but at the exhibition of the finished work, in the summer, nothing but gold mount or flat is permitted as the boundary of the picture. By the enforcement of these regulations a uniform effect is secured, and no man has power to overwhelm his neighbour.

The medals on the whole have been awarded with discrimination. The one for the snow scene is perhaps open to question. The work is admirable, but it is neither better nor worse than that of last year, for which a similar award was given. It has to be remembered also that snow pictures taken in the abnormally clear air of the Engadine present no real difficulties to any one living on the spot, and the fair worker is evidently a resident in that health-giving retreat.

The judges have been far more liberal than those of last year. That being the case it is puzzling to understand why it is that whilst a medal has been given to above-named pictures that present no feature of novelty, and another to a certainly beautiful study of still life, but still not seriously taxing the artistic faculty of the worker, the strikingly original artistic production of Mr. Lord has been overlooked. This is a picture that would do honour to any monochrome exhibition. The subject is simple and homely—only a couple of countrymen enjoying themselves in the taproom of some village inn. There is no posing whatever, for the figures are as natural as life. The ale-house high-backed settle makes the main part of the background, and a table is before the rustics, on which is placed the earthen white and blue pint mug, and it stands out with wonderful reality, that one is inclined to take it up to see if it is empty or not. One countryman has passed his snuff-box to the other, and his face shows that he is eagerly awaiting a reply to his question, "How's that?" The other, however, is too busy with his pinch of snuff, and enjoying it far too much to give an immediate answer. Here is a picture so well thought out, and so well carried out in every particular, that it might easily be mistaken for a photogravure from the work of Gussow, and yet it has escaped an award.

The walls are not at all crowded with pictures, and report says that upwards of 200 have been rejected. There are, however, a large number of excellent pictures in portfolios which should not be overlooked by the visitor to Pall Mall. The pictures will be dealt with in detail next week.

During the course of the Exhibition there will be displays by means of the Optical Lantern, every Monday, Wednesday, and Saturday evening, as below:—

Sat.,	October	1.—Slides by Mr. W. D. WELFORD, entitled "Hand-Camera Work."
Mon.,	,,	3.—Slides sent to the Exhibition for Competition.
Wed.,	,,	5.—Slides by Commander C. E. GLADSTONE, R.N.; also a series entitled "Street Cries," by Mr. E. SCAMELL.
Sat.,	,,	8.—AMATEUR PHOTOGRAPHER Prize Medal Slides, 1892.
Mon.,	,,	10.—Slides by Mr. W. ENGLAND.
Wed.,	,,	12.— ,, Mr. T. M. BROWNRIGG.
Sat.,	,,	15.— ,, Mr. H. LITTLE.
Mon.,	,,	17.— ,, Members of the Photographic Club.
Wed.,	,,	19.— ,, ,, ,, Manchester Photographic Society.
Sat.,	,,	22.—Slides by Members of the Newcastle Photographic Society.
Mon.,	,,	24.—Slides by Mr. A. R DRESSER, from Photographs at the "Wild West Show."
Wed.,	,,	26.—Slides by Members of the Convention.
Sat.,	,,	29.—Slides by Members of the Birmingham Photographic Society.
Mon.,	,,	31.—Slides by Mr. E. G. LEE.
Wed.,	Nov.	2.—Slides by Mr. E. G. LEE, Amateur Photographers' Field Club.
Sat.,	,,	5.—Slides by Mr. RICHARD KEENE.
Mon.,	,,	7.—(To be announced later on).
Wed.,	,,	9.—Slides by Mr. B. G. WILKINSON.

HOVE CAMERA CLUB.

THE first annual exhibition was held in the Town Hall on Wednesday and Thursday last, September 21st and 22nd. It was held as a section of the exhibition of the Hove Industrial Society. Four years ago this section was started with small money prizes. Last year six medals were offered for competition. This year seven more medals were added by the Camera Club, and a small committee of the latter carried out the arrangements.

The room was tastefully decorated with Indian and Liberty fabrics, palms, etc., and though large enough for the exhibits was not large enough for the number of people who crowded in, especially in the evenings. Next year it is proposed to devote to this section a room about three times the size. The photographs were hung round the room, and upon an inverted V-shaped erection running down the middle. The lantern slides were shown upon two tables in front of the windows. They were made to stand at an angle, with white card at the back, and showed in that way very well indeed. There was also a Tylar's Lanternescope for those who wished to view them more closely.

APPARATUS.—A Noakes's triple lantern, by Mr. Levett; Davenport's Ever-ready dark-room, from the makers; four Thornton-Pickard shutters, from the makers; "Frena" hand-camera, Messrs. R. and J. Beck; two "Talmers" and the "Economic," by Messrs. Talbot and Eamer; Cantilever enlarging apparatus, Mr. Hume; and a general exhibit by Mr. J. Williamson. An attractive feature was an exhibit of prize photographs lent by the Editor of the AMATEUR PHOTOGRAPHER, Mr. S. Francis Clarke's "Seven Ages" attracting much attention.

Mr. A. Pringle and Mr. J. Traill Taylor acted as judges. The quality of work sent in was rather above the average for a local show, especially in the lantern-slide classes. The latter were shown in the large room of the Town Hall on Monday evening, September 26th. The following are the awards made by the judges:—

P 1. SIX LANDSCAPES.—Silver Medal, C. Job, Hove; Bronze Medal, A. H. Webling, Hove; Certificate, A. H. C. Corder, Brighton.

P 2. SIX MARINE SUBJECTS.—Silver Medal, A. H. Webling, Hove; Bronze Medal, C. Job, Hove; Certificate, E. J. Bedford, Lewes.

P 3. SIX PORTRAITS OR FIGURES.—Silver Medal, J. Hunter-Graham, Brighton; Bronze Medal, Mrs. Grant Watson, Godalming; Certificate, Miss Hall, Hove.

P 4. Six Slides, Landscapes or Seascapes.—Silver Medal, C. Job, Hove; Certificate, J. Williamson, Hove.
P 5. Six Slides from Hand-Camera Negatives.—Bronze Medal, Major Lysaght, Queenstown; Certificate, A. H. Webling, Hove.
P 6. Six Slides, Architecture.—Bronze Medal, C. H. Oakden, East Dulwich; Certificate, E. J. Bedford, Lewes.
P 7. Six Slides, Brighton Views.—Bronze Medal, A. H. Webling, Hove; Certificate, J. Williamson, Hove.

Harmonising Negatives.

(*Continued from page* 176.)

I will now pass round some prints from negatives before and after rehalogenisation, calling your attention to variations in and additions to the process necessary to secure different effects. I have, with one or two exceptions, printed in platinotype as being less suited to harsh negatives than print-out silver paper, and in order to show what the process is capable of, most of the prints are from what would be considered hopelessly harsh negatives previous to treatment. I need scarcely say that I would not recommend that time should be spent, except for practice, upon any but negatives that are likely to give good results.

The prints marked A are from a portrait negative taken under very unfavourable circumstances. In the first print the deepest shadows are reversed, and the letterpress on the book is barely visible. The second print is from the negative after rehalogenisation. You will note that detail is visible in the darkest shadows, and that the light half-tone is just as discernible, the whole print being fairly soft. The third was printed after the book and hands had been locally reduced; a little more detail is visible in them, but the reduction has not been evenly performed.

B is another portrait; you will see how dark it has been necessary to print the shadows before the detail in the face was strong enough. The second print is rather too dark, but you will note the absence of the aggressive brilliancy noticeable in the first.

C is from the negative of a waterfall, lent to me by a member of our Society. In the first print the rocks are a mass of black, with one or two white leaves, showing the water as a mass of white broken only by a few dark streaks of shadow. The print, after rehalogenisation, is, I think, quite a passable picture. It was, of course, impossible to obtain detail in the seething waters, as the exposure given had been too long to secure that.

D and E are attempts to obtain passable prints from much under-exposed negatives. Both seemed to be void of detail in the shadows. The only deposit of silver seemed to be in the sky and its reflections through the trees from the water. The other portions of the negatives were badly fogged in forcing the development. D was cleared with hypo and ferricyanide, rehalogenised to soften extreme contrast sufficiently to permit of intensification, intensified with pyro and silver, and badly stained in the process. In attempting to clear this away the film frilled, and further manipulation was impossible. A slight improvement is noticeable in the second print. The surface fog was cleared away from E with bichromate and sulphuric acid before the first print was taken. It was then rehalogenised, the sky being reduced to a mere yellow stain. When laid on a sheet of white paper faint signs of detail were discernible in other parts of the plate. It was then five times intensified with mercury, followed by ferrous-oxalate (Mr. Chapman Jones's method). The traces of halation round the tree tops visible in the first print, though apparently removed by rehalogenisation, were strengthened by intensification, but the shadow detail was much improved.

If the subject were worth the trouble, I believe it would be possible to remove the halation and slight traces of fog still remaining, and to obtain a soft clear print, showing sufficient detail in the shadows.

F is a print of a pine tree avenue, from a negative lent to me. The topmost branches are invisible from halation, and the foliage in places has the appearance of being powdered with snow. The negative was rehalogenised, and I think you will admit that the second print shows these faults entirely removed.

G is a portrait group by one of our members. He performed the process of rehalogenisation from the formula I gave him. Although the first print is a warm-toned gelatino-chloride of silver, one which favours the harsh negative, I think the second print in platinotype shows the negative to have been much improved.

H is from a negative lent to me. It is a drawing-room scen through folding doors, taken to test a wide-angle lens. The lace curtains over the window opposite the lens are badly halated. I hoped that after rehalogenisation some detail would have been seen in the halated parts. Unfortunately, the plate was poor in silver, and unable to register the extreme contrasts of light and shade. In the second print the window is a patch of light grey, void of detail, although the other parts of the print are much improved. I thought I saw slight signs of detail in the window part of the negative, and carefully reduced it with bichromate and sulphuric acid, in the hope of accentuating the shadows there, but the third print shows no improvement in that respect.

I is a view on the Brent—an attempt to show what might be done with a fairly good negative. The first print shows a blank sky. The landscape is, perhaps, a trifle wanting in brilliancy. As there were clouds shown in the negative, it was rehalogenised.

In the second print the sky and clouds print out, but the whole print is poor and flat, the result of too compressed a scale. The negative was then intensified with pyro and silver, and the third print shows sufficient brilliancy—more certainly than the first—and yet the sky, with its fleecy clouds, prints out. This is an instance of two scales being introduced into the composition, each of them being compressed slightly in the shadows, and the light half-tone rendered a little more fully.

In order to judge of what the process is capable of doing, it may be well to consider the action that takes place.

If we were to strip the gelatine film forming the negative from the glass support, and reverse it so as to have what was originally the back of the plate outwards, and were able to remove the gelatine, leaving the silver image intact, we should find that image in the form of a low relief, the shadows being extremely thin, and the high lights the thickness of the film. If now it were possible to take a shaving off the top of the image, removing only a portion of the lights and light half-tone, that light half-tone would be reduced in density, but would print as a flat, grey tone, without gradation. This is approximately what takes place when the development, after rehalogenisation, is stopped before the high lights are developed right through to the plate.

Fortunately, the simile does not hold good to the full extent. The developer in soaking downwards does not act in rigid planes. Before the shadow detail is fully developed, the action has proceeded a little further in the half-tone, and by the time the half-tone is thoroughly developed the highest lights are beginning to show traces of action at their points of greatest density. The result is that if the development be then stopped in fixation, a thin film of silver is removed from the back of the negative, thickest from the high lights, thinner from the half-tone, and not at all from the shadow detail. Some gradation of tone is therefore preserved in the light half-tone, but it must be borne in mind that this will not show the brilliancy it had in the original state of the negative.

I believe that the composition of the developer will modify the action to a slight extent. By using a little bromide, or reducing the quantity of ammonia, the action will be retarded, and the developer will act more evenly through the thickness of the film. This is the method to be employed when the contrasts are great and the shadow detail fairly strong. When the negative is thin, but still strong in contrast, the opposite method should be followed. The developer should act speedily, as by the time the shadow detail is thoroughly developed, the high lights will also have been developed so far that little or no improvement will have been effected.

You will see that in asking you to give this process a trial I do not recommend it as a panacea for all the ills that photographic negatives are heir to, nor do I suggest that in all cases where it may prove useful it will effect the whole of the cure. It must be used with judgment, and in many cases must be preceded and followed by other treatment. I recommend it as probably the best way of lowering the light in a broad and even manner, without affecting the shadows, thus introducing a second scale of light and shade into the negative.

Should the negative be too flat after treatment, it may be intensified either generally or locally to give the desired brilliancy. Or if the negative, though flat, be still fairly dense all over, it may be reduced generally or locally.

The effect of intensification and reduction will be very different, though an unobservant eye might not distinguish between them, but the worker who desires to achieve certain results will discriminate in their use.

Intensification affects the shadows but slightly, the half-tones and lights being greatly strengthened, the result being analogous to the artist's method of rendering the lights in an approximation to the natural scale and compressing the shadows.

Reduction will affect the lights to a trifling extent, while greatly altering the shadows. In the print the shadows will approach more nearly to nature, and the lights will remain flat.

The art side of the question forms no part of my subject. The application of these methods to our work in accordance with the canons of art will, I hope, be treated by a member of our society more capable than myself, at no distant date.

I may, however, to illustrate my point, call your attention to a collodion negative (which has been lent to me) made from a steel-plate engraving. If we disregard the fact that it is composed of lines, and consider only the relative values of the light and shade, we shall be struck first with the shortness of the register, the general flatness, if I may use the term, and secondly by the brilliancy of the local contrasts.

Were we to expose a thickly-coated isochromatic plate upon such a scene, using a yellow screen, we should find upon development that while the landscape portion of the negative would resemble to some extent the negative before you, the sky and its reflections in the water would, while showing strong local contrasts, be so opaque that it would be impossible to print them out; yet by rehalogenisation, followed by partial or general intensification or reduction, or by a judicious use of both, something approaching the desired result might be obtained.

As evidence of this, I will ask you to examine the negative from which the prints marked were taken.

Without presuming to compare that negative to the collodion negative, either in artistic composition or technical excellence, yet I think that the relative values of the masses of light and shade, and the local contrasts, will be found to be somewhat similar.

In conclusion I desire to express my opinion that our best negatives from a technical point of view are those which most require and will best repay the time spent in trying by the various means in our power to make the tones and relative values of light and shadows more nearly approach the results obtained by the draughtsman and the painter.

Societies' Meetings.

Birmingham.—Ordinary meeting held on the 22nd inst., Mr. W. B. Osborn in the chair. The minutes of the previous meeting were read and confirmed. Two new members were nominated for election. The Chairman announced that the society was greatly indebted to Messrs. Morgan and Kidd, who had generously presented a magnificent bromide enlargement of a portrait of the President (Sir J. B. Stone). The enlargement, which was made from a negative taken by Mr. Harold Baker, forms a conspicuous feature on the walls of the club-room. Mr. Geo. A. Thomason then delivered a paper on "Stereoscopic Photography," which will appear next week. A discussion followed, in which the Chairman and Messrs. Griffiths, Iliff, A. J. Leeson, Owen, T. Taylor, E. Underwood, Watson, and E. Wilkes took part.

Brechin.—The annual meeting was held on the 21st inst. In the absence of the President, Mr. A. R. McLean Murray occupied the chair. The usual reports of the Secretary, Treasurer, and Curator were submitted and approved of. The Treasurer showed a balance in favour of the Society, and intimated that the debt incurred by the fitting up of the rooms had now been wiped out. The Curator showed that the lantern had been well taken advantage of during the last winter, having been borrowed by members on twenty-two occasions. The following office-bearers were elected for the coming year:—President, Wm. Shaw Adamson, jun., of Careston; Vice-Presidents, H. Braid and Bailie Lawrence; Treasurer, A. Innes; Curator, J. C. Middleton; Secretary, James D. Ross, 6, High Street, Brechin, N.B. Committee: Messrs. G. F. Robertson, B.Sc., J. Buchanan, and A. Brown. The Association having been engaged during the past year in preparing slides to illustrate linen manufacture, those ready were exhibited to the members. There were present: Bailie Simpson, Messrs. J. H. Lamb, John Lamb, G. A. Scott, D. Duke, J. Watson, Martin Lamb, J. S. Baxter, J. Bruce, J. Cuthbert, and others engaged in this manufacture, and all expressed the opinion that the slides were very satisfactory. It is intended to have a lecture prepared to accompany them, when the Association will be prepared to circulate them among those interested in this subject. It was intimated that at next meeting the Secretary would give a demonstration of "Enlarging on Eastman Bromide Paper."

Brixton and Clapham.—A meeting was held on 20th inst, Dr. Reynolds (President) in the chair. The subject for the evening was "Exposure and Development," the discussion on which was to have been opened by Mr. W. Bevins, in whose unavoidable absence Mr. J. A. Butler read a short paper, addressed principally to beginners, for whose benefit the meeting was chiefly intended. Referring to exposure, Mr. Butler said that this necessarily depended largely upon the aperture of the diaphragm used with the lens, and explained that in order to form any correct idea upon the subject it was necessary to ascertain the ratio of the aperture to the solar focus of the lens. In order to avoid complications, he advised the use of two stops only, $f/16$ and $f/32$, the former to be used when a short exposure was necessary, and the latter when time was no object. If this plan was adopted, and one kind of plate only used, he said a sufficiently correct judgment of exposure was rapidly and easily acquired. Besides the aperture of the diaphragm used, exposure was influenced by the distance, colour, and degree of illumination of the subject it was desired to photograph, and the sensitiveness of the plate. The degree of illumination could be estimated by observing the height of the sun above the horizon and the state of the atmosphere. He advised that a full exposure should be given whenever possible, as it was only when this was the case that any control whatever could be maintained over the character of the negative during development, and said that the amount of latitude in exposure possible with plates of good quality was very great indeed, assuming careful development. For the developer Mr. Butler recommended the use of pyrogallol, potassium bromide, and ammonia in 10 per cent. solutions, and said that pyro could be preserved in solution for an indefinite period by the use of either potassium metabisulphite (½ oz. to 1 oz. pyro), or sodium sulphite (4 oz. to 1 oz. pyro, acidified with strong sulphurous acid). The character of the negative varied as development was allowed to proceed quickly or slowly. Rapid development gave a soft or even flat negative, slow development a vigorous or even hard one. Mr. Butler recommended the acid fixing bath, which could be made by adding a small quantity of bisulphite of sodium or metabisulphite of potassium to the ordinary solution of hypo. Some discussion followed, in which many points of interest in development were touched upon, and on the motion of the Chairman the usual vote of thanks was passed to Mr. Butler. It was announced that the winter session would commence on Tuesday, the 4th October, and that meetings would be held on the first and third Tuesdays in each month. The dates for the annual exhibition of the Club were fixed for the 17th, 18th, and 19th November.

Burnley.—On 21st inst. this society held a musical and artistic social gathering in their rooms, Hargreaves Street, when nearly seventy persons were present. During the evening a very interesting ceremony took place in the presentation to Messrs. Lee and Kellett of two medals (a silver and bronze) suitably inscribed for excellence of work in the local competitions. The rooms were beautifully decorated, and suitable refreshments were also provided.

Cromwell.—The monthly meeting was held on 12th inst, Mr. H. Pechey in the chair. The Secretary placed upon the table a number of packets of the Ilford printing-out paper which had been sent to him by the Britannia Works Company for distribution amongst the members of the club. He also produced for the inspection of the members several prints made by himself upon sheets of the paper that were enclosed in one of the packets, remarking that the toning of the prints was carried out strictly in accordance with the instructions (also enclosed). The members were very pleased with the quality of the prints, and eagerly sought for a packet, that they might try samples for themselves. A letter was received from the Thornton-Pickard Company, asking for a list of the members' names and addresses, and it was resolved that their request be granted.

Croydon (Camera Club).—Probably the last this season of the series of field excursions was held on 17th inst., when the Vice-President of the club, Mr. B. Gay Wilkinson, conducted a party of members to Lingfield. Here during the morning he gave his followers some interesting object lessons in practical composition, the method pursued by him being to choose a subject, and then proceed to show how it may be best illustrated. In this way "thumb-bit lunch" and "ploughland work" were successfully attacked, Mr. Wilkinson arranging the positions of the chief figures, and indicating the most advantageous points of view, at the same time explaining the why and wherefore. The afternoon was similarly spent at Pain's Hill and district, a promising series of scenes depicting "Gathering," and "Cottage Life," being obtained. The usual fortnightly Monday evening meetings begin on October 3rd, and an unusually interesting season is being looked forward to with much pleasurable anticipation,

Eastbourne.—An ordinary meeting was held on 21st inst. The President (the Rev. H. G. Jameson) occupied the chair, and among others present were Mr. H. Michell Whitley, Mr. B. Fox-Watkins, Dr. Gabbett, Dr. McQueen, and Messrs. Arnold, Arrowsmith, East, Kelsey, T. E. V. Kirtlan, Nash, Pennington, Rodda, Strange, Sparrow, Williams, E. Burnham (Hon. Secretary), and about thirty others. Seven new members, including the Mayor (Alderman W. E. Morrison), were proposed. Dr. McQueen then gave his promised "Holiday Notes," illustrated with lantern slides. The notes consisted of a description of a tour in Scotland during July, among the places visited being Oban and Dumfries (the doctor's birthplace). The slides showed great taste in choice of subject, and were wonderfully fine views of the places visited. The oxy-hydrogen light was lent and worked by Mr. Sparrow, of Pevensey Road. The next meeting will be held on October 5th, when some experiments in flashlight photography will be conducted by Mr. Flatman.

Faversham.—The usual monthly meeting was held on September 20th, Dr. C. J. Evers in the chair. Attendance, ten. The enlarging apparatus purchased by the Society (Lancaster's Combination Multum-in-parvo 12 by 10 size) was inspected, and Dr. Evers showed specimens of work done with it. Several members brought photographs taken at the last excursion, which were duly criticised, and selections made for the Society's albums. Arrangements were made for a special meeting to be held on October 7th, to meet Mr. Baldwin, of the Eastman Company. The winter programme was then discussed, and the following adopted:—October 18th, "Lantern-slide Making," different processes by several members; November 15th, "Stereoscopic Photography," Dr. Evers; December 20th, exhibition of members' lantern-slides, Mr. Jackman; 1893, January 17th, "Platinotype Printing," Mr. Cremer; February 21st, "Lantern Experiments," Mr. Stunt; March 21st, "Isochromatic Photography," Dr. Evers. Notice of exhibitions of the Bedford and Leytonstone Camera Clubs were read, and circulars from Messrs. Beck and Sharp and Hitchmough were laid upon the table.

Hackney.—On 20th, Mr. F. Houghton in the chair, Mr. B. Wire was nominated. The particulars of the last excursion of the season, to Hampstead, were given. A tea and smoking-concert at the "Bull and Bush" was decided on. Mr. A. Barker showed prints he had executed with amidol on bromide paper. Mr. Carpenter showed some lantern plates he had made with it, also a print; he had obtained a good platinum print with it. Other work was shown by Messrs. Pollard, Gosling, Dean, etc. The Developan Company then showed their speciality. Mr. Dando was afraid the top glass (light) was not safe, but was informed that as it was not directly exposed to the light there was little danger of fog. In answer to questions from the Hon. Secretary respecting the suction of plate, it was said to be an advantage. Mr. Nunn then had the developan handed to him for trial, and report next meeting. Mr. Carpenter showed a brown-paper dark-back. Some discussion ensued respecting the limit of attendances for competing in the exhibition, in which Messrs. Gosling, Beckett, Dean, Wesson, Barton, Dando, and others took part. Meetings are held every Tuesday at 206, Mare Street, not Morley Hall as heretofore; and the Hon. Secretary's address is now 12, King Edward Road, N.E.

Holborn.—On the 17th inst., Mr. J. Stevens in the chair, Mr. F. C. D. Beacham demonstrated the use of his patented pigments for spotting and retouching, and his liquid water-colours for tinting photographs. With regard to the former, the pigments are put up in various forms—in crayons, cakes, or liquid. Any of them answer well for retouching purposes, and can be used upon the bare negative without either varnish or medium. For spotting prints, the cake or liquid is used, and can be applied either before or after enamelling or burnishing. It can also be used dry for spotting platinotypes or bromides, and any other papers with a matt surface. Mr. Beacham also tinted some silver prints with his liquid water-colours, and a very satisfactory result was obtained. It seemed to be a very simple process indeed, and if we cannot get photography in natural colours we can tint our photographs afterwards, and get something very near approaching it. On Friday, the 23rd inst., quite a large number of members' slides were thrown on the screen, The first were by Mr. F. J. Cobb, and among them were some of the Southern Counties Cyclists' Camp at Dorking this year, followed by some of Amersham and Chenies. Some by Mr. T. O. Dear followed, mostly slides of the Cyclists' Camp, and then a large number by Mr. J. H. Avery. Some of these were excellent slides, and included some of the upper Thames scenery, inland scenery, with a few animal studies. A small set by Mr. A. T. Elsworth, all of the Cyclists' Camp, concluded a very pleasant evening.

Hull.—The annual meeting was held on the 22nd inst., the President (Mr. E. H. Howlett, F.R.C.S.), in the chair. The President, in moving the adoption the report, alluded to the successful work done by the society during the past year. Their membership had increased, and, what was more gratifying, they were financially on a sound basis. The exhibition of members' work had been the means of creating a healthy spirit of competition amongst the members, and if was not financially quite so successful, it had artistically come fully up to their expectations. He felt that the thanks of the society were due to Messrs. Barry and Turner, who so willingly had acted as judges, and to Mr. A. N. Jameson for the gift of medals. He was especially pleased to think that it was through their instrumentality that Mr. Paul Lange had made his first appearance in Hull, and he thought that they could consider his lecture one of the most successful given in the town during the past session. The adoption of the report was seconded by Mr. Allcott, and carried *nem. con.* Numerous suggestions were made to further improve the working of the society, and mention was made of the society's affiliation with the Photographic Society of Great Britain. It was also announced that steps were being taken to secure the services as lecturers of some of the best known authorities in the art and science, it being expected that the winter syllabus will excel even that of the past year. Votes of thanks were accorded to the retiring officers and council; and, especial mention being made of the services of the President (Mr. Howlett) and the retiring Secretary (Mr. J. H. Allcott), both suitably replied. The former stated that he felt he had earned his retirement, having passed through the secretarial, vice-presidential, and presidential chairs. He assured them, however, that, though but an ordinary member of the council, his efforts would always go towards promoting the society's success. The election of council and officers was then proceeded with, the following being the result: President, Mr. C. D. Holmes; Vice-President, Mr. John Pybus; Treasurer, Mr. D. W. Sissons; Hon. Lanternist, Dr. Walker; Hon. Librarian, Mr. B. M. Stoakes; Hon. Secretaries, Messrs. A. H. White and E. E. Cohen; Council, Messrs. J. H. Allcott, H. L. Adams, C. F. Amos, G. J. Boville, Rev. Coleman, Croshaw, Rev. W. Hay-Fea, E. H. Howlett, F.R.C.S., A. N. Jameson, T. Rose, Dr. Stothard, and Dr. Hollingsworth. It was arranged to hold club meetings on Thursday and Saturday evenings, during the winter session, when papers will be read and slides exhibited.

Liverpool (Am. Phot. Assoc.)—On the 22nd inst. the formal opening of the beautiful new club-rooms was celebrated by an "At Home" given by the President, Mr. William Tomkinson, who gave a most humorous poetical effusion, specially written by Mr. Clarence E. Dyall. The committee of the Artists' Club, whose rooms adjoin those of the Photographic Association, very kindly lent the use of their rooms for the occasion, thus enabling the President to invite the whole of the members (upwards of 300) and their lady friends. An excellent musical programme was contributed by Miss Anyon and Messrs. Cleaver, Yates, Blenkarn, Talbot, Kelly, Anyon, Macreedy, and H. and W. Norman-Thomas. Mr. Yorke convulsed the audience with his humorous recitations. Mr. Geo. E. Thompson gave his interesting new lecture on "The Roman Compagna," illustrated by slides from negatives taken by him in the spring of this year. The lecture was listened to with great attention, frequent bursts of applause testifying to the appreciation of the crowded room. After an interval for refreshments, votes of thanks were accorded to all who had so kindly come forward to assist, and to the President for his entertainment. An impromptu dance, which was entered into with great spirit, brought a most enjoyable evening to a close.

North London.—On the 20th inst., Mr. A. Mackie in the chair, after the usual preliminary business, the Secretary reported that having tried the new developer, Amidol, he had found it to work very satisfactorily. In some cases, according to exposure, he had found it difficult to obtain printing density, but from the character of the image and the clearness of the shadows, after-intensification gave no trouble, and worked well. As a one-solution developer it appeared to fill the claims made for it. The Secretary further reported that he had received tickets for the annual exhibition of the Photographic Society of Great Britain, which under the affiliation rules were to be obtained by members at half price. Mr. Redmond Barrett then gave a practical demonstration of retouching, showing with regard to negatives brought by himself and by members what should not be attempted, what ought to be done, and how to do it. Scratches, pinholes, and other defects were also dealt with, and the best mode of dealing with such explained and illustrated. With regard to the use of retouching medium, Mr. Barrett advised the use, not of the finger tip, but of a tuft of cotton wool, with which a very small quantity of medium should be well worked not merely on but into the film. Should any of the work come away in the subsequent varnishing, it would have to be made good when the varnish was dry; in fact, it was generally desirable to make any finishing touches at this stage.

North Surrey.—This Society held its first meeting of the winter session on the 20th inst., Mr. J. Morrish, the President, in the chair, when a programme was arranged. Prints on the Eastman P.O.P. were handed round by a member, and met with the general approval of those present, and the merits of gelatino-chloride paper generally, and of the new developer Amidol were discussed.

South London.—Ordinary meeting 19th inst., the President, Mr. F. W. Edwards, in the chair. A large number of prints from negatives made from samples of Paget's plates were handed in for competition for the President's award for the best picture. The President, who was assisted in the judging by Mr. Walter Woodbury, of The Paget Prize Plate Company, awarded the prize, a fine 12 by 10 platinum print of Shanklin Chine, to Mr. C. H. Oakden, and stated that Messrs. Buckle and Kelly followed close behind him in merit. Owing to illness at home, Mr. W. Groves was unable to read his paper on "Photography in Natural Colours," and his place was filled by Mr. Mark Boxhall, who in the course of his remarks dealt with all the recent discoveries which by some were calculated to attain the desired end. In the end, the lecturer, in his usual characteristic style, declared that all the inventors were on the wrong tack, and stated that if photography in natural colours was attained at all, in his opinion it would be through the agency of some of the tar compounds. Mr. Boxall's remarks were strongly criticised by several of the members present. By the courtesy of the importers, samples of Amidol were distributed among the members, who were to report their experiences of its properties to the next meeting.

SOCIETIES' FIXTURES.

Sept. 29.—LONDON AND PROVINCIAL.—"A New Gelatine Emulsion for Lantern Slides," by G. T Harris.
„ 29.—WARRINGTON.—Conversazione.
„ 29.—LIVERPOOL (Amateur).—Ordinary Meeting.
„ 30.—RICHMOND.—Show of Prints.
Oct. 1.—LEYTONSTONE.—Presidential Address by D. W. Pickett Turner.
„ 1.—HACKNEY.—"Winding-up" Outing to Hampstead, "Bull and Bush."
„ 3.—HACKNEY.—Trial of Competition Lantern Slides.
„ 3.—S. LONDON.—Cinderella Dance.
„ 4.—STAFFORDSHIRE (Potteries).—"Printing Processes," by Mr. E. J. Stonier.
„ 4.—SUTTON.—Meeting.
Oct. 4.—BIRMINGHAM.—"Manipulation of Gelatino-Chloride Paper." Mr. E. Underwood.
„ 4.—CANTERBURY.—Exhibition of Holiday Pictures.
„ 4.—HACKNEY.—Open Night.
„ 4.—NORTH LONDON.—Lantern Night.
„ 4.—BLACKHEATH.—Annual General Meeting.
„ 6.—LEEDS.—"The Education of an Amateur Photographer," Mr. S. A. Warburton.
„ 6.—OXFORD.—Annual Meeting.
„ 6.—LONDON AND PROVINCIAL.—"Various Printing Processes," Mr. B. Foulkes Winks.
„ 8.—LEYTONSTONE.—Discussion: "The Eastman Paper and Paget Plates." Opened by Mr. F. Waites.

The Formby Camera Club has been wound up in consequence of the majority of the members, including the President and Secretary, having left the town.

The Thornton-Pickard Manufacturing Company have removed to larger and more extensive premises at Altrincham, near Manchester, their business having increased so rapidly that the old premises would no longer suffice.

Mr. Walter D. Welford, as a hand-camera worker, affects street life and scenes. He has just received recognition of his work from Her Majesty the Queen of the Belgians, who specially instructs her secretary to express her admiration of the Belgian street scenes.

The pupils of the high school of Salem, Mass., are preparing an interesting memorial of that ancient town for the World's Fair. The amateur photographers of the school are engaged in the preparation of a series of views of the many points of historic interest in which the town abounds. These are to be finished by the pupils themselves, and are to form the illustrations of a handsome album. The descriptive letterpress of the book, also the work of the pupils, is to be neatly written on a typewriter, so that the whole volume will be literally the handiwork of the children of Salem.

To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume.*

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5821. **Moonlight Scenes.**—Can any reader give me suggestions as to the best papers on which to print moonlight scenes?—MOONLIGHTER.

5822. **Egypt.**—Can anyone give me some information as to photography in Egypt? Is exposure more rapid than England? Is there any dark-room at Cairo and Luxor? Can chemicals, plates, etc., be bought there? Would Fitch's films be suitable to take, and can a concentrated developer, easily carried, be recommended for these? What gelatino-chloride paper keeps best in hot countries? Is Powell's concentrated toning bath in tubes good for this paper?—LUXOR.

5823. **Hydroquinone Developer for Lantern Slides.**—Will some kind reader recommend to me a good developer as above for lantern plates, as I have used Ilford Universal developer, and always found the film to entirely strip off the plate, although using every precaution to mix developer as stated, and used as cold as possible? The plates I use are Ilford special rapid. Is it the fault of the plate or developer? Any hints will oblige.—SURPRISED.

5824. **Pizzighelli Paper.**—Should this paper be printed first and steamed after, or *vice versâ*? If steamed before printing, would it not stick to the negative? How are the prints developed and fixed?—H.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Sept. 2nd.—No. 5801.
„ 9th.—Noe. 5808.
„ 16th.—Nos. 5813, 5814, 5815, 5816.
„ 23rd.—Nos. 5817.

ANSWERS.

5807. **Instantaneous Plates.**—The Ilford Red Label, Imperial extreme rapidity, Paget's XXXXX, Edwards' instantaneous Iso., and the new Lightning plates are all good. Try them, and stick to the brand you have chosen. I believe plates are especially packed in air-tight boxes for India, and keep just as well with care. Surely "Rix" does not go to the unnecessary trouble of coating his own plates when such excellent plates are to be had at a minimum of cost.—A YOUNG SNIPE OF THE PLAINS.

5809. **Positive Appearance.**—I believe fixing the negative in daylight is the cause of the positive appearance. Perhaps the muddy appearance on the negatives is caused by over-developing or by fogging, through an unsafe light. Your negatives might be improved with the following clearing solution after development:—

Alum	1 oz.
Citric acid	½ „
Water	5 „

—A YOUNG SNIPE OF THE PLAINS.

5818. **Hymn Slides.**—This question was answered in the AMATEUR PHOTOGRAPHER, February 26th, 1892, p. 173, and March 18th, p. 227, except that part relating to lens. "Puzzled" must use one of shorter focus.—EXPERT.

5819. **Seaside Exposures.**—In my experience these should be much shorter than others, as almost every object at the seaside reflecting light is blue or white, rather than red or yellow, except, perhaps, the sand, but even this, being generally wet or glistening with salt, etc., reflects white light.—EXPERT.

5820. **Blacking Stops.**—Aspinall's black enamel will not do for stops, it reflects the light. Try a bath of sulphate of copper and carbonate of ammonia, followed by the application of heat. The tin division in the dark-slides can be easily coated with a dull black by applying a mixture of French polish and gas black or vegetable black, using just enough polish to make the black adhere without a gloss appearing.—EXPERT.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

D. W. F. M.—We should say that your prints were from negatives developed with hydroquinone or eikonogen.

LAURENCE S. SMITH.—You give us no information as to the toning bath used. Probably the fault lies in not carrying the toning far enough, or it may be due to the fixing bath being acid. Will you write again and let us know exactly how you work.

A. J. GARWOOD.—You will find that the Thornton-Pickard shutter would fit the 5½ in. Optimus with the hood on, and the 7½ by 5 without its hood.

ROBIN.—The best mountant is a gelatine mountant made by soaking 200 grains of soft gelatine in 6 oz. of water for half an hour, then melting by the aid of a gentle heat, and adding gradually 2½ oz. of methylated spirit, and one or two drops of carbolic acid. When required for use liquefy by the aid of heat. We will see if we can insert criticism.

J. ROBERTSON.—Aug 12th, 19th, and 26th are the numbers you require.

R. H. M.—If you will turn to our issue of 23rd inst., p. 219, at the head of second column you will find a solution of wax recommended which will prevent all your trouble. (2) The answer to this would be too long for this column. If you have back numbers turn to October 23rd and 30th, 1891. (3) To copy an old photograph set it up, outdoors preferred, square with the lens—then move your camera back-

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 418. Vol. XVI.] FRIDAY, OCTOBER 7, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

Our Views.—Lantern-slide Competition: the Standard High—Optimus Competition—The Pall Mall Exhibition and the Public Press—The Artistic Pictures—The *Star* on the Pall Mall Show—Photographs of the Year—The *English Illustrated Magazine*—The Hackney Society's Exhibition—Messrs. Elliott and Son's Picture and Our Critic.

Chit-Chat, by Chatterbox.

Letters to the Editor.—Camera Fittings (H. J.)—Medals at Pall Mall (Tollie)—Amidol (Davidson)—*Truth* on the Amateur (A Camerist)—Transparent Markings on Gelatine Plates (C. of A.)—A Warning (Walshe)—The Chicago Exhibition (Ward)—The P. S. G. B. (Gottlieb)—Todmorden Exhibition (Binns)—Elliott and Son's Monthly Paper and Picture at Pall Mall—The Hackney Society Exhibition (Fenton Jones)—Medals at Pall Mall (Not an Exhibitor)—Exeter Am. Phot. Soc. (Sparshatt).

Articles.—Photographic Procedure (Wall)—How to Make a Set of Photographic Apparatus (H. J.)—Stereoscopic Photography (George A. Thomason)—Phot. Soc. of Great Britain—(Second Notice).

Holiday Resorts.—To Arcadia with a Camera (Harvey).

Reviews.—Die Photographische Camera und die Moment Apparate (Eder)—The Telephotographic Lens (Dallmeyer)—La Photographe en 1892 (Niewenglowski)—The Hand-Camera, and How to Use It (Welford)—The Practical Photographer's Label Book (Lund).

Apparatus.—Scott's Dark Slide.

Societies' Meetings.—Hackney—Harlesden and Willesden—Liverpool A. P. A.—London and Provincial—Leigh—P. S. G. B.—N. Middlesex—S. Manchester—Warrington.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months, 5s. 6d.....		Twelve Months, 10s. 10d.		
Postal Union	,,	,,	6s. 6d	,,	,, 13s. 0d.
Out of Postal Union ..	,,	,,	7s. 9d.....	,,	,, 15s. 3d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

Amateur Photographer" Monthly Competition, No. 41.—"Inland Scenery with and without Figures." Latest day, Oct. 24th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, November 11th.)

In accordance with our announcement last week, the judges, Messrs. Blanchard, Cembrano, and Wellington, attended at our offices on Monday, the 3rd inst., and the slides were passed through the lantern with the following results:—

Class I., Landscape, Sea Pieces, and River Scenery, with or without figures.

Silver Medal	J. E. Austin.
,, ,, ...	J. A. Hodges.
,, ,, ...	W. B. Post.
Bronze Medal	S. Fancis Clarke.
Certificate	J. O. Arnold.

In this class the judges were unable to differentiate between the first three competitors, and also they did not feel disposed to award gold medals.

Class II., Portraiture and Figure Studies, to include indoor or outdoor pictures.

Gold Medal	Edgar G. Lee
Silver Medal	Mrs. S. F. Clarke.
Bronze Medal	Alfred Stieglitz.
Certificate	J. D. Lysaght.

In this class the gold medal slides are of very fine quality, and it would probably have been a much closer thing, only Mrs. Francis Clarke's slides were a little too hard and chalky in the lights.

Class III., Architecture, interior or exterior.

Gold Medal	J. W. Wade.
Silver Medal	F. W. Burton.
Bronze Medal	J. Shaw.
Certificate	S. L. Coulthurst.

The premier position was undoubtedly won in this class by the exquisite soft results obtained. Many of the slides in this class were too hard and too brilliant.

Class IV., Instantaneous Work, limited to slides from 5 by 4 negatives and under.

Gold Medal	Withheld.
Silver Medal	,,
Bronze Medal	H. N. Cooper.
Certificate	C. S. Cobb.

This was undoubtedly the weakest class of all, and if, as was probably the case, the slides were from negatives taken in hand-cameras, they showed that the users were content to take anything and everything without much regard to artistic composition, a striking contrast to the work of

Mr. E. G. Lee, who takes the gold medal in Class II. with figure studies taken in a hand-camera.

WE are glad to state that, notwithstanding the fact that the judges withheld some of the medals, they expressed themselves very well satisfied with the slides as a whole, the standard being decidedly high. Most of our competitors may congratulate themselves on the fact that, even though not medalled, their work was good, the proportion of inferior work being decidedly small. It is no easy matter to turn out ten slides, all of excellent quality, both technically and artistically; and next year we shall certainly reduce the number of slides required, as many men can turn out five or six almost perfect slides when ten of the same class would be too many.

WE would remind our readers that the last day of this month will be the latest date for sending in prints to the "Optimus" Competition.

THE Pall Mall Exhibition—which by the bye has been, we hear, exceedingly well patronised, the total number of visitors for the week ending October 1st being 1,654—has been reviewed in most of the daily papers, sometimes favourably and in others unfavourably. The picture which seems to have attracted most attention is No 404, which is a photograph of Mont Blanc, taken with Dallmeyer's Telephoto lens at a distance of fifty-six miles. This, however, has a scientific interest.

THE artistic pictures, if we may say so, seem to be Col. Gale's, B. Gay Wilkinson's, W. Bedford's, Karl Greger's, and last but not least, Elliott and Son's carbon enlargement of Mr. Birt Acres' "Wave Study." It is curious to note that most of the pictures mentioned in the papers are those which we have selected for "Photographs of the Year."

THE *Star*, however, if not favourable, is at least honest and straightforward, as the critic starts with an outspoken admission :—

"There are days, and this is one of them, when I think honesty the best policy even for the art critic and the 'Artist Unknown.' Let me, therefore, state frankly at the outset that I know nothing of the mechanical, chemical, and scientific processes at work in the production of a photograph. I must be counted among the philistines who pull the button and let the Kodak people do the rest."

After noticing one or two prints, the critic goes on to say :—

"But there is one thing which the camera cannot do—make a picture. Photography is not art; the two things are as wide apart as north and south poles, and never will or can be identified. But this the photographer refuses to understand. He has his own sphere of usefulness, but he is for ever seeking to soar above and beyond it. He must be the artist he loves to call himself. He makes elaborate compositions and groups, turns his camera upon them, and dignifies the results as pictures; the effect is deplorable. We have sick-bed scenes in the manner of Mr. Fildes, rural scenes suggesting Mr. Macbeth, interiors with figures that for detail would put Dr. Seiler to the blush. The British public love a story; therefore the photographer must vie with the artist in the telling of it. We have the story of a cloud, and the story of a child blowing bubbles; when one man makes a photograph of Trafalgar Square, it becomes 'Fishing in Preserved Waters'; another, who has studied his Royal Academy catalogue, is not content until he has found the appropriate line of poetry for title. All this can serve no purpose, unless it be as warning to the painter who has set up the painted photograph as his standard."

We hardly think this fair, but how would some of our friends receive this dictum?

WE are glad to be able to state that the following are the pictures, permission to reproduce which, for "Photographs of the Year," we have kindly received :—

"Quiet Life." By Karl Groger.
"The Silver Strand." By Gay Wilkinson.
"Flatford Bridge." By Col. J. Gale.
"The Foot Bridge." By F. P. Cembrano, jun.
"The Love Letter." By A. Burchett.
"Portinscale Bridge, Keswick." By T. M. Brownrigg.
"A Sluggish River, Choked by Sedge and Flag." By George Lamley.
"A Portrait." By F. Muller.
"In the Pool." By L. C. Bennett.
"Worn Out." By J. E. Austin.

The letterpress will be written by Mr. Horsley Hinton, so well known for his artistic work and writing.

As the edition will be limited, we would ask our readers to immediately send their orders to our publishers, an order form for which purpose will be found on p. xiv.

THE *English Illustrated Magazine* for October contains an article by Mr. Alfred Watkins entitled, "A Summer among the Dovecotes," which is illustrated by pen and ink drawings from the author's prints. Interesting in itself, the paper presents a very good example of specialisation in photography. So many amateurs use their cameras as a means of obtaining pictures and bits, when if they confined their attention to one particular branch or subject they would turn out far better work. The paper by Mr. Watkins possesses also a great archæological interest, as many of these old dovecotes are, like their former occupants, becoming things of the past.

THE Hackney Photographic Society will hold their annual exhibition in the Morley Hall, Hackney, on November 15, 16, and 17, the judges being Captain Abney, Col. Gale, and Mr. R. W. Robinson, and the awards are on a much more liberal scale than last year, and consist of a large number of gold, silver, and bronze medals of special design, besides other prizes. Lantern exhibitions will be given in the evenings, and the committee have struck out a new line in offering a novelty in the shape of a comic opera entitled "Amateur Photography, and what Came of it." The following are the classes :—

MEMBERS' WORK.—(Class A) For any picture taken *since* last exhibition, except animals, portraiture, and genre. (Class B) For any picture taken during membership, but *prior* to last exhibition, except animals, portraiture, and genre. (Class C) For any picture taken at a Club outing *since* the last exhibition. (Class D) For portraiture and genre. (Class E) For set of four lantern slides taken *since* last exhibition (still life excluded). (Class F). For set of six hand-camera pictures. (Class G) For best picture of animal life. (Class H) For set of six stereoscopic slides taken *since* last exhibition.

OPEN CLASSES.—Entries in these classes may be priced for sale at the option of the exhibitor.—(Class I) For set of six lantern slides. (Class J) For set of six stereoscopic slides. (Class K) For any picture except portraiture and genre. (Class L) For portraiture and genre.

MESSRS. ELLIOTT AND SON have written us with regard to our critic's remarks on their enlargement which won a gold medal at the Pall Mall show, and we publish their letter with pleasure, because we think they have mistaken our ideas on the subject. Certainly we never intended to impute dishonesty to them. We shall, however, have more to say on this subject next week, as their letter was received very late for this issue.

Chit-Chat.

Gently, gently, good masters! I pray you to remember 'tis but a "Chatterbox" whose prattle calls forth your indignation. Let me reply first to Mr. Horsley Hinton's courteous letter by saying that I cordially acquiesce in every sentiment which finds expression in it, and I sincerely trust that the writer will acquit me of any intention to include him within the category of those to whom I applied the epithet to which he takes exception. To honest criticism of the character to which he refers, I offer not a word of protest, nor was it against such that my strictures were addressed.

So far, Mr. Hinton, I confess, I feel more difficulty in dealing with a gentleman who tells me, as "Meter" does, that out of eighty-four consecutive exposures, under varying conditions, he obtained eighty-two negatives "as nearly perfect as possible," two being fogged by error in manipulation. Perhaps, if he and I were to compare notes, it might be found that our opinions upon technical perfection in negatives were slightly different. Be that as it may, if he, or any other amateur, finds the use of an exposure table a better guide to correct exposure than the exercise of his own judgment, by all means let its use be continued, but notwithstanding, my advice to beginners is, learn to cultivate judgment in estimating exposure. But this question to be argued to demonstration needs more space than the Editor will allow me, in this column. I may on a future occasion go more deeply into the matter.

There remains Mr. Turnbull, whose fame as a skilled manufacturer of apparatus is, of course, well known to me. I confess, however, that I have but a hazy recollection of his film-slide. If he will be good enough to send one for my inspection to the Editor, I shall, if it really fulfils the conditions which I enumerated, be only too pleased to acknowledge the fact here. Being still "far from the madding crowd," or, in other words, on holiday-making intent, I cannot at present express any opinion upon the show at Pall Mall. I hear, however, that the exhibits exceed in number those of last year, which would seem to indicate that the confidence of exhibitors has not been very materially shaken.

The "scientific gentleman" on the staff of the *Daily Chronicle* seizes the opportunity of airing his photographic knowledge by informing his readers that "the most startling thing is the decadence of the silver print," and in the next sentence tells them that it is replaced by Obernetter paper, gelatino-chloride paper, Soltype, etc. Verily, "a little knowledge is a dangerous thing."

I am not a member of that venerable institution, the P.S.G.B., nor, indeed, am I likely to become one whilst it continues to hold its meetings so near the sky. "Those dreadful stairs" are, I am informed, largely responsible for the very scant attendance at its technical meetings.

I hear rumours of a proposal to form another central photographic society, and I am informed that several well-known and influential workers have expressed their willingness to co-operate and assist in its organisation. The Camera Club subscription is too great a tax upon the pockets of many, and in the opinion of some people more attention latterly has been paid to the social than the technical attractions of that institution. Without venturing an opinion upon the matter, I certainly incline to the belief that there *is* room for a new central society if it be run on approved lines. Its head-quarters must be in some convenient and accessible position; the annual subscription should not exceed £1 1s.; its chief object should be to afford the means of discussing technical, artistic, and scientific matter, pertaining to the practice of photography, rather than to cater for the purely social wants of the members; the sale of wines and spirits should not be permitted; and, lastly, it should promote and organise an annual exhibition, a special feature at which should be collective society exhibits. These are some crude ideas upon the subject. Will my readers refine them?

The use of the hand-camera, it appears, is still subject to abuse. Last week's Amateur Photographer, I notice, contains a report of a lecture given by an amateur photographer, illustrated by lantern-slides, among which, we are informed, were "snap-shots of passengers overcome by *mal de mer*." Such subjects, I do not hesitate to say, are unworthy the attention of any photographer possessing the ordinary instincts of a gentleman.

Mr. Thomas makes a good suggestion, but I suspect many of the smaller suburban societies would find some practical difficulty in joining in the scheme which ho proposes, owing to their lack of dark-room accommodation. In this respect many provincial societies are far ahead of the smaller London societies. This condition of things is the reverse of commendable. The main object of a society is, or should be, practical instruction, and efficient means of imparting it should be a primary consideration. Chatterbox.

Letters to the Editor.

CAMERA FITTINGS.

Sir,—In reply to "G. T. W.'s" letter which appears in last week's Amateur Photographer, I beg to state that I have my reasons for not stating where to obtain the fittings, one of which is, I do not believe in giving any one firm a free advertisement to the exclusion of all others; and another, I find that it pays best to go to different firms for different articles, and having found out (as I think) where to obtain them cheap and good, surely it is better not to mention names at all. I am perfectly willing to obtain them for any and everyone, and have already done so for several. And if "G. T. W." likes, I will for him, but I must decline to mention the name of any firm, for the above reasons, and others of my own.

I have written many articles during these last few years, and this is a rule I always stick to, and shall continue to do so, even though it might perhaps be to my own benefit to advertise some particular firm on the cheap, but there is far too much of this done.

I cannot tell where aluminium fittings can be obtained at present, but if I can get them I will give prices in an early number of the paper.

Trusting that "G. T. W." and other readers will not think me uncourteous for not complying with his request, I am, yours faithfully, H. J.

[We noted in our last issue that Messrs. Platt and Witte were supplying aluminium fittings.—Editor.]

* * * *

MEDALS AT PALL MALL.

Sir,—Perhaps the most interesting cases which those who make a special study of mental disorders have to deal with are those in which the patient is sane and hard-headed enough upon all ordinary matters, but is incapable of exercising reason upon some particular subject. It is impossible to consider such insane, and, except where the mental aberration takes the form of a mania for destroying life or property, personal restraint is neither necessary nor politic. It has been said that no one is free from monomania of some kind, but whether this is true or not, it is certainly a fact that many are liable to outbursts of temper which, while they last, render them incapable of acting with discretion. "Anger is temporary madness" is a favourite motto in the copybook, and it is a more truthful proverb than most.

In the photographic word there is one phase of temporary

madness which comes frequently to our notice. It attracts disappointed exhibitors at our exhibitions, or disappointed contributors—those whose pictures have been hung but not medalled, whose pictures have not been placed in the prominent places their authors expected, and those whose works have been rejected. The complaints of these in your correspondence columns and those of your contemporaries are too familiar with us.

He who has been hung but not medalled usually writes under his own name, in which case he is studiously mild and courteous in language and sorrowful in tone. He complains of no injury or injustice to himself. Indeed, he is careful to make no reference to himself or his works, but his sympathy with the wrongs of others is unbounded. He deplores the appointment of judges utterly incapable of appreciating true art; he deplores the incompetency of the hangers; and he deplores the general mismanagement of everything connected with the exhibition and with the affairs of the society holding it. He is moderation itself, but his moderation is too transparently artificial to deceive anyone.

He whose pictures have been rejected adopts a different tone. He is ashamed to acknowledge his identity, and writes under a pseudonym. He fears not to display his rage, and directly charges the judges, hangers, and everyone connected with the exhibition with venality, favouritism, fraud, and any other crime that suits the occasion. He lays great stress on the point that so many bad examples have been hung. You may always recognise the rejected contributor by the comparison that is obviously running in his mind between the very bad pictures that have been hung and his own which have been rejected. He is outspoken in his condemnation of the awards, and constitutes himself an authority above the judges. I should like to know, says he, why was such and such a picture medalled, when there were at least forty better pictures passed over? I should like to know why was this or that?—anything his thoughtlessness or stupidity suggests. Poor fellow! He is a donkey masquerading in a lion's skin. His roar is but a bray, feebly disguised.

Fortunately, little harm is done. No one believes that honest men become scoundrels, or that business men lose their cunning directly they associate themselves with an exhibition. Mistakes doubtless occur, for no man is infallible, but the vindictive criticism of self-interested parties will neither mend nor prevent them.—Yours faithfully, F. J. TOLLIE.

* * * *

AMIDOL.

SIR,—I notice the questions asked in various photographic papers respecting the use of Amidol, and also statements to the effect that it is no good for lantern slides, producing a slight veil. This is not so when used in conjunction with ferrocyanide of potassium (yellow prussiate of potash). Dilute the stock developer as instructed with twice or three times its bulk of water, and add 20 minims of a 10 per cent. solution of the ferrocyanide to every ounce of diluted developer.

Develop until the image looks very black and shows on the glass side. Fix as usual. Using Mawson's plates I get absolutely clear shadows, without the use of a clearing bath, such as I have found it impossible to obtain with any other developer. Your readers can soon satisfy themselves on the point by exposing a slide, cutting it in half, and developing one part in the plain solution, the other with the addition of the ferro. With some plates pretty good results can be obtained without the addition, but these results are inferior. The main thing seems to be to secure sufficient density, which is not difficult.

I shall be glad to hear the results of experiments made. Perhaps you will find time to try it yourself. I send you three plates, half of which are developed with, the other without the potash.—I am, yours, etc., B. DAVIDSON

(Lewisham Camera Club).

[The slides sent by our correspondent prove very conclusively the advantages to be gained by the use of ferrocyanide. We have not yet had time to try this.—EDITOR.]

* * * *

TRUTH ON THE AMATEUR.

SIR,—I read this week's AMATEUR PHOTOGRAPHER with great amusement, especially those letters that appeared in *Truth*. I am going to ask your opinion on the subject (mind, kind sir, I am *not* a "snap-shottist"). Don't you think if people objected to being photographed in attitudes so prevalent at the seaside, that they would behave themselves as decently as you would see them in London? If people don't like their friends to see the attitudes that they put themselves in at the seaside, what do they want to do it for? You know the old saying, "Do nothing that you wouldn't wish your friends to know." I have seen girls at the seaside, well, to say the least, extremely *decolletée*, paddling about with the utmost unconcern, but these very same girls would squeal and almost faint if they saw the same thing done in the town or place of amusement. Hope I have not wasted too much of your valuable time about these grumbling people.—Yours truly, A CAMERIST (TRIPOD).

* * * *

TRANSPARENT MARKINGS ON GELATINE NEGATIVES PRODUCED DURING WASHING.

SIR,—Can you or any of your experienced correspondents enlighten me as to the cause of the transparent markings on the accompanying negative, of which I also enclose a print? This plate is one of about eighty exposed this season in Scotland, of which a considerable number were good, but many, after being placed in the washing tank, became affected like the specimen, which is not by any means the worst. Up to the washing all went right, and the plates appeared spotless, but after some hours' washing in running water under a tap the defects complained of appeared and proved fatal to at least thirty. In order that you may be able to judge of the cause, you should know the mode of procedure.

The plates were Edwards' extra-rapid, some isochromatic; developer, Tondeur, made up with distilled water, was used, and I may say that I have been using this developer with success for the last three years. The hypo bath was the ordinary one, after which the plates were immersed in an alum bath.

The washing tank was that known as the Godstone, and is made of zinc. In all the operations (except the developer) the tap of the Kent Waterworks was used; this is considered the purest water in the neighbourhood of London, but very hard.

I apprehend that "the usual explanation of these holes or pinholes as they are called, being dust on the plate," as you put it in a recent number, is not available on the present occasion, for every possible means were taken each time of using to remove dust from the camera and the slides, and from the plates both before and after exposure. You will notice that the holes are not circular like "pinholes" or air bubbles, but elongated and somewhat in the shape of a comma straightened, and that they take a course across the width of the plate, the largest part of each defect presenting itself (as I imagine) on the highest point of the slanting direction in which the plate was placed in the washing tank. I therefore suppose the zinc washing tank is to blame.

How am I to remedy these defects in the future? Further photographic proceedings are stayed until the means of prevention are discovered, and for these I appeal to the AMATEUR PHOTOGRAPHER.—Yours, etc., C. OF A.

[Our correspondent has made one error in his procedure, viz., the use of an alum bath immediately after fixing. We are not prepared to state, however, that this has anything to do with the mishap complained of, although it might have, which is in no way the fault of the plate, but due to excessive washing. We have met with this misfortune on no less than four different brands of plates this summer, and it is probably due in some degree to the heat of the weather.—EDITOR.]

* * * *

A WARNING.

SIR,—As one who has suffered terribly through the gross carelessness of a photographic firm of chemists, and now that the lantern season has opened, I wish to give you some particulars of a fearful explosion, in the hope that you will warn your readers who make their own oxygen gas for the lantern, and that none of them shall ever have my awful experience, which has left me broken down in health and spirit, all through a chemists' blunder.

I ordered from a photographic firm of chemists six pounds of oxygen mixture, viz, four parts chlorate potash, two parts black oxide of manganese. The parcel came by parcel post, labelled *oxygen mixture*. I weighed out 1¾lbs. of the mixture, put it into the retort (a safety one), placed it on a small fire in my studio, and in less than one minute a fearful explosion occurred.

How I escaped Providence alone knows. The roof and side of my studio were blown to pieces, skin and flesh were burned off my left hand from the finger nails to the elbow; my right also; my face and throat were one mass of cuts, and my eyes were so terribly inflamed that the doctor thought I should be blind for life. The retort was made pieces of and twisted in all shapes. The bars of the fire-grate entered in the cement wall opposite (11 ft.) to the depth of half an inch. The report was heard at a great

distance. I think I must have been in a stooping position at the time, and the side and roof of my studio being nearly all glass gave way at once ; otherwise very likely I should not be alive to pen this letter.

After the explosion, blind and bleeding as I was, I made for the doors (there were two), and I succeeded in gaining the open air. Another second I should have been suffocated. The feeling after the explosion was fearful. The fumes given off were like so many sharp knives cutting the throat inside. I was quite exhausted ; the moment I reached the open air I fell.

I shall not dwell on my sufferings during the past three months. Before the explosion occurred I was eleven stone weight, now I am only eight stone eleven pounds. I had to undergo two operations for my eyes, and one eye, I fear, will never be the same again.

I got the mixture analysed, and what do you think this photographic firm of chemists sent me, after stating distinctly that I wanted the oxygen mixture to make oxygen gas for a lime-light lantern?

They sent me a mixture of chlorate of potash and sulphide of antimony, which has left marks and tokens on me that I shall take to the grave.

As I am bringing an action against them I do not mention the name of the firm.

My principal reason for sending you this letter is, as I said before, that you may warn your readers that they get the proper mixture if they make their own gas. I have 4¼ lbs. of the mixture still.

Any further information I can give you you are welcome to, or if you wish to enquire about the explosion the police here can give you all particulars, as they were on the scene ten minutes after the occurrence, and I believe made a note of all that happened and were witnesses to my awful condition.—Yours, etc, THOS. B. WALSHE.

* * * *

THE CHICAGO EXHIBITION.

SIR,—May I have the use of your columns to give a "hint" to those who contemplate visiting Chicago next year. It is this: The steamship companies have held a convention, and have mutually pledged themselves *to book no passages in advance for the dates during the World's Fair*. This means that the rates next year are going to be "fancy." Messrs. Cook and Gaze "have not yet been able to complete arrangements." The Polytechnic has secured some 2,000 passages during the summer, can now secure no more, and has applications for far more than that number. I have been fortunate in obtaining from them the refusal, for a few days, of ten berths in the Guion liner *Alaska*, sailing July 1st, and ten in the Guion liner *Arizona*, sailing July 15th. The former is the best trip for those who want to join in the photographic meetings, and who can give five weeks to the round trip. Here is the bald outline:—Leave Liverpool July 1st, New York arrive July 8th, in New York two days, Pliladelphia one day, Washington two days, Chicago arrive July 15th. Meetings of the Photographers' Association of America, July 18th to 21st. Meeting of the World's Congress on photography a week later. Sail from New York July 29th.

For those who can only give a fortnight ashore, I may be able to secure berths in a vessel sailing a week later. In this case, if they wished to attend the photographic meetings, they would have to sacrifice some of the other part of the journey.

The Polytechnic fare, for return steamer, second saloon, rail from London to Liverpool and back, first-class fare over route as above, hotel accommodation, and board all the time, and carriage driving at Niagara, where almost a full day is allowed, is 26 gs. for a fortnight on land. Those who spend three weeks, putting in the extra time at Chicago, will be charged about 50s. or £3 more.

To secure a berth you must pay £4 4s. 2d. If you cannot go, you will forfeit this amount, unless you can transfer your ticket to someone else, in which case you forfeit a transfer fee of 10s.

It is likely that passages will be at a high premium, so that there is no likelihood of difficulty in transferring, but I only want to book the few passages at my disposal to photographers who have a *bona-fide* prospect of going. I can give further particulars if required (stamp enclosed for reply), and in a few days the Polytechnic will issue a "Descriptive and Illustrated Guide," price 1s. 3d., or in cloth 2s. 3d., post free.—Yours, etc.,

H. SNOWDEN WARD.

THE P. S. G. B.

SIR,—Being an ardent lover of photography I have been sorry to see the unpleasantness which has sprung up and "grown" in and about the parent society. Photography is nowadays a most lovely pastime, and it is unfortunate to have contentions therein. I would say to the contentious ones, shake hands and be friends—each man has a right to enjoy his own opinion. I was particularly grieved to find one gentleman's (Mr. A. Horsley Hinton) pictures "absent" from the Pall Mall Exhibition, as I think "all" persons were most delighted with his very beautiful work last year.—I am, yours, etc., A. W. GOTTLIEB.

* * * *

TODMORDEN EXHIBITION.

SIR,—Owing to the numerous applications I have received asking for entry forms for our forthcoming exhibition, I should be glad if you would state in your next issue that there will be no competitions in connection with the Exhibition, our society being only a new one and not in a position to give prizes.

However, the Council will only be too glad to receive any picture fit for exhibition, and will feel indebted to any one sending anything with a view to help us to make our first exhibition a success.—Yours faithfully, JOHN T. BINNS

3, Garden Terrace, Todmorden, (Hon. Sec).
October 3rd, 1892.

* * * *

ELLIOTT AND SON'S MONTHLY PAPER.

SIR,—Since issuing the first number of our little paper we find that we have adopted a title that was already in use by Messrs. George Mason and Co., the well-known dealers in photographic materials of Sauchiehall Street, Glasgow. We therefore tender Messrs. Mason our apologies, and beg to inform your readers that we have modified the title of our paper, which will henceforth be known as "The Photographer's Record," which will, as before stated, be sent post free, and supplies forwarded, carriage paid, to secretaries of societies and dealors in photographic goods, for distribution.

Apologising for trespassing on your space, we are, yours, etc.,
Barnet, Horts, October 3rd, 1892. ELLIOTT AND SON.

* * * *

ELLIOTT AND SON'S PICTURE AT PALL MALL.

SIR,—We note your remarks on our exhibit at Pall Mall exhibition, and although, no doubt, you have a right to express your opinion as to the colour (which, however, is entirely at variance with all the other critisims both in the general and photographic press), we consider your remarks as to what you call an attempt at misleading the public not only in very bad taste, but entirely uncalled for. We refer your readers to the opinions of the Press which we include in our advertisement in your paper this week.—Yours truly, ELLIOTT AND SON.

* * * *

THE HACKNEY SOCIETY EXHIBITION.

SIR,—Will you please allow me to apologise to those gentlemen who have applied for forms in the forthcoming exhibition of our Society. The applications have been somewhat numerous, and it was found necessary to amend the forms somewhat.—Yours faithfully, W. FENTON JONES (Hon. Sec.)

* * * *

MEDALS AT PALL MALL.

SIR,—Your correspondent "Spectator," in asking "Why the medals at the Pall Mall Exhibition are awarded each year to a favoured clique, irrespective of whether their work is best or not," assumes incapacity or dishonesty in the judges, an assumption which reasonable people will not take for granted upon the mere authority of an anonymous writer, who may, so far as the reader can judge, be either an exhibitor disappointed of a position or medal to which he considered himself entitled, or be writing under the inspiration of those who, being denied special privileges, have done all that they can to revenge themselves by endeavouring to deter exhibitors from sending to Pall Mall, by circulating attacks on the Society, and threatening to organise rival schomes.

The appointment of judges is by election by members of the Society, and since the events of last year, when the executive

decided to allow no special privileges to any exhibitor, it may fairly be said that any cliquism has been stamped out, and that criticisms which at one time might have had some justification are now quite misplaced.

It is satisfactory to know that the entries for the exhibition were, in spite of the efforts before alluded to, of ample number, although, owing to the much greater strictness of the scrutiny by the judges and hanging committee, the number of exhibits actually shown is smaller.

The photographic and the general Press, with one notable exception, the personal animus of which has been pointed out by several of the photographic papers, have almost unanimously declared the present exhibition to be the best that has been seen for several years. The Society and its Exhibition ought not to be prejudiced by anonymous attacks on the judges who have been openly elected, and whose work is on the whole endorsed by competent authorities in the Press.—I am, yours, etc.,

NOT AN EXHIBITOR.

* * * *

EXETER AMATEUR PHOTOGRAPHIC SOCIETY.

SIR,—The dates fixed for our exhibition are November 24th to 26th. There will be four classes for members, and four which are unreservedly open to all. Full particulars and entry forms may be had from the Hon. Secretary. There will also be a show of photographic apparatus, inquiries as to which should be made to the Hon. Treasurer, Mr. J. Hinton Lake, 41, High Street, Exeter. The lantern slides exhibited will be shown on the screen each night, while, on the 24th, Mr. Welford will give an address on hand-camera work, illustrated by a large number of his well-known slides.—I am, yours, etc., JNO. SPARSHATT

(Hon. Sec.)

Photographic Procedure.

BY E. J. WALL.

(*Author of the "Dictionary of Photography."*)

SECTION VI.

DEVELOPERS AND DEVELOPMENT.

(*Continued from page* 171.)

Pyro and Ammonia—Developing Under-exposed Plates.—Whilst we recognise the fact that under-exposure may be of two kinds, there is not the slightest doubt that, use what developer we may, we cannot fetch out of a plate what is not there. Many operators recommend the soaking of an under-exposed plate in a solution of ammonia, with a little bromide, and while this may be useful to reduce contrast it certainly will not fetch out more detail. The only thing to do is to use a developer which is fairly strong, and with the full quantity of ammonia, at once; this is if we know the plate has been under-exposed.

When, on the other hand, on developing a plate in the manner suggested above, that is by the gradual addition of ammonia, we find the shadow details will not put in an appearance, then the best method of procedure is to throw off the developer used, and apply one strong in ammonia, which may be compounded from our stock solutions as follows:—Pyro solution, 60 minims; bromide solution, 60 minims; ammonia solution, 60 minims; water to 2 ounces, and apply this to the plate, and continue development as long as possible. Some plates, it must be noted, will not stand as much ammonia as this without showing fog, but fog need hardly frighten anyone, as it is so easy to reproduce negatives without any fog showing.

Developing Over-exposed Plates.—It is not a difficult matter to correct over-exposure with pyro and ammonia, provided the same be known beforehand, and it is not even an impossible matter when, ignorant of the exposure, the plate has been treated as one normally exposed.

If over-exposure is known to exist, then we can modify our developer by increasing the pyro and bromide, and reducing the ammonia, so that for an over-exposed plate our developer would be compounded of pyro solution, 80 minims; bromide solution, 80 minims; ammonia solution, 30 minims. But instead of applying this to the plate it would be advisable to proceed as was first suggested, that is to say, by adding the ammonia by degrees.

Developing Plates exposed on Subjects with great Contrasts.—The development of plates exposed on subjects with great contrasts is one in which many a worker fails, if we may judge from some of the prints sent into our competitions. Yet it is a very easy matter, provided we know how to set to work.

We may wish to increase or preserve the contrast as far as possible, as in copying line drawings, and let me at once state here that for this work special plates must be chosen, such as Mawson or England's photo-mechanical plates, or even, in the absence of these, the ordinary slow lantern plate as prepared for black tones will give good results, such as Edwards', Verel's bromide transparency, or Imperial, or any other make. I merely mention these because I have used them for this work, not with any special idea of recommending these specially.

Given the exposed plate we must alter our developer slightly, and it is far better to add a little metabisulphite to it for this work, to which we shall refer later on, or the following may be used:—

No. 1.

Pyro	64 gr.
Citrate of ammonia	20 „
or Citric acid	15 „
Distilled water	4 oz.

No. 2.

Ammonia ·880	2 drm.
Bromide of ammonia	180 gr.
Distilled water	4 oz.

For use mix in equal parts.

This formula, which was suggested by Mr. B. J. Edwards, will be found of very great use for copying or lantern work or for any purposes where we wish to increase contrasts.

In cases when we wish to reduce contrast, such as chalky or white-washed cottages against dark trees or snow-capped mountains, we must reduce the pyro and bromide and increase the ammonia. But possibly I may be permitted to introduce an article from the Year Book of 1888 by Mr. Edwards, from which article the above formula was extracted:—

Among the multitude of developers of various kinds now in use, or proposed from time to time, the original alkaline developer—pyro and ammonia—still holds its own for general utility, and, except for a few special purposes, is found by experienced workers to best meet their requirements. Not the least among its many advantages is the fact that by simply altering the proportions of the ingredients it is easy to produce at will any desired quality in the negative, from the soft and delicate detail in a portrait negative, to the opaque density and clear glass shadows so desirable in a copy of a line engraving. Moreover, by having at command the two forms of developer, giving such widely different results, the latitude which may be allowed in exposure is enormously increased.

For studio work, or where the exposure is known to be correct, the normal pyro and ammonia developer will usually be all that is needed; but when it is required to develop a number of outdoor negatives, taken at different times, and under varying conditions of light and exposure, some modification will often be required, otherwise it will be found that the same treatment, which will give perfect negatives in some cases will produce hopeless failure in the others. For instance, over-exposed negatives will usually come out flat and wanting in contrast, or if development be long continued the shadows will be too much buried to give brilliant prints.

In order to meet this difficulty it has hitherto been the usual practice, when developing a series of landscape negatives, to feel the way, as it were, by commencing each with a developer containing a minimum quantity of ammonia, or an excess of pyro, as a safeguard, in order to secure sufficient density in case of over-exposure.

This plan is, however, only partially successful, inasmuch as in the case of plates which do not happen to be over-exposed by the quality of the resulting negatives cannot fail to be seriously deteriorated, owing to the employment of an unsuitable developer at the commencement; it is too late to remedy the defect by altering the developer after the first action on the film has taken place.

By adopting the plan now proposed (which is exactly the reverse of the method above indicated), much difficulty is avoided—correctly exposed plates are developed as they should be—while good printing negatives are easily secured on plates which have received as much as eight or ten times the normal exposure.

In the collodion process the universal practice was invariably to first bring out the detail in the negative by means of an energetic iron developer, and then, after washing the film, to re-develop or intensify with pyro and silver to the required printing density.

A somewhat similar method of intensification, or re-development before fixing, will be found to work perfectly with gelatino-bromide plates. The *modus operandi* the same in both cases, except that washing will seldom be needed between the two operations.

The following method of working has been fully tested in practice, with excellent results.

The development of an exposed plate (correctly timed or not, as the case may be) should be commenced with a developer of the usual normal strength, containing, say, about two grains of pyro to each ounce of solution, with ammonia and bromide in proportion to suit the plates used, when working under ordinary conditions. After pouring on this developer the result should be carefully watched. It will soon be seen whether the exposure has been correctly timed, in which case no alteration will be needed, the negative being completed with the required density and detail in one operation. If, however, the plate should appear to be over-exposed (which will be shown by the way the details come out without any apparent increase in density), the normal developer must be thrown off at once, and the thin image flooded (without stopping to wash the plate) with the pyro redeveloper; intensification will now rapidly take place, the further development of excess of half tones being checked at the same time. This second development should be continued until the required density is obtained, after which the plate is washed and fixed in the usual way. The redeveloper consists of a concentrated solution of pyro and ammonia, well restrained, so as to give great excess of density in the most exposed parts of the negative. The following will be found a good formula:

No. 1.

Pyro	64 gr.
Citrate of ammonia	20 ,,
Or citric acid	15 ,,
Distilled water	4 oz.

No. 2.

Ammonia (·880)	2 drs.
Bromide of ammonia	180 gr.
Distilled water...	4 oz.

For use mix equal parts of No. 1 and No. 2.

The mixed redeveloper may be used for several plates in succession; it may also be mixed with the ordinary developer in any desired proportion to suit special subjects, while alone it forms a capital developer for reproduction in black and white or for lantern slides, and transparencies on ordinary bromide plates.

By the above system of modifying the development, so as to harmonise with the actual exposure given, much time is saved, and far more uniform results can be obtained than by the ordinary method, care being taken that all negatives, as far as possible, are sufficiently exposed so as to avoid failures from under-exposure. With under-exposed plates very little can be done; they will never make good negatives. Perhaps the best plan in case of under-exposure is to dilute the ordinary developer to about half strength, and wait patiently for the detail, and then finish with the normal developer or the redeveloper, as above, before fixing. It is useless to attempt to force out the image by the use of a large access of ammonia.

Pyro-developed negatives should always be treated after fixing with a clearing solution containing sulphate of iron. This has the effect of removing all stains, and changing the colour of the deposit; it also renders the negatives absolutely permanent, so that they will not change afterwards by the action of light.

This is the method also recommended by Captain Abney for the same purpose, and from practical experience I can strongly recommend it.

(To be continued.)

Holiday Resorts and Photographic Haunts.

TO ARCADIA WITH A CAMERA.—III.

By Lieut. G. Harvey.

The present paper will for many reasons form one of the most interesting photographic tours described under the above heading, for, apart from the great beauty of the surrounding district, we have here relics of great historical and architectural interest. Mayfield is 52½ miles from London Bridge, has its own station, and is on the L.B. and S.C.R. The photographer must not omit to take with him a set of lenses (wide angle is in constant requisition), and a plentiful supply of plates, as if he runs short of the latter, he will be unable to renew his stock without great inconvenience and loss of valuable time. The village of Mayfield possesses in its palace a relic of past grandeur and architecture. It dates from the year 900, and was a favourite residence of the Archbishops of Canterbury from the time of St. Dunstan (died 988), until Cranmer, who alienated it to Henry VIII. It is now a Roman Catholic nunnery, and the photographer may gain admission any day between 3 and 4 p.m. by ringing at the great gateway. Most important apartment now remaining is the great hall, measuring internally 68 ft. long, 38 ft. wide, and 50 ft. high. Notice especially the three fine supporting arches, and their massive external buttresses. Some stone diaper work at the far end of the hall indicated the throne of the Archbishop; this has been moved into the ante-chapel. The hall was dismantled during the last century, and was only recently restored. It is now the chapel of the establishment. Don't miss the ante-chapel, and in it you will see the anvil and tongs of St. Dunstan, a cannon cast in the vicinity, and the Gresham sword. The great dining-room has a very fine hooded chimney-piece, of stone, with an iron chimney-back dated 1663. Of course the great hero of Mayfield was St. Dunstan, and you will hear much interesting matter concerning him. Mayfield Church is not of very great interest, beyond the Early English tower, and the mural tablet to T. Aynscombe (1620). Visit Eridge Park (Marquis of Abergavenny). The views are many and exceedingly fine. Footpath through the wicket gate by side of the little church at Eridge gives access to Eridge Rocks, which are about a quarter of a mile up the private road running in N.W. direction They are surrounded by trees, and with judicious treatment make most bold pictures. Make for Crowborough Beacon, 796 ft. View in any direction very grand and imposing, but only advisable to expose on a very clear day. On summit is the observatory (C. Prince, Esq.). At Heathfield there is also a very fine subject for the photographer, but be sure and look south. Heathfield has many historical associations which space prevents me from mentioning. The famous Jack Cade was a native of this place, and the hamlet of Cade Street, near Heathfield, derives its name from this gentleman. Do not fail to journey to Warbleton (2½ miles south), for there is much to do, and should upon no account be missed. The church is of great interest. Notice in chancel the brass and portrait of Dean Prestwick (1446), with beautiful crocketed canopy. Expose on the elaborate marble monument of Sir John Lade (1740) in north aisle. See the old chest; it is very curious and deserves a plate. Outside of the south wall is a somewhat uncommon feature—a rounded arch, probably designed to cover a tomb. The church stands at N.E. corner of, and partly within, a Roman earthwork, which one may trace and photograph. Visit the Augustinian Priory (Henry IV.); existing remains rather scanty, and is now portion of a farm house. In one of the rooms are preserved two skulls, and in adjoining room there are stains of human blood, which cannot be effaced. You can see these on application, and I advise exposure for the interest attached to them. While you are thus far, a journey to Dallington will well repay the fatigue and trouble, for a more picturesque parish it would be difficult to imagine. Go to the church, ascend the tower, note the staircase, and secure a view, which is most artistic. The snap-shot man should not fail to be in Hailsham on a market day. It is a cattle market, and is held fortnightly. I omitted to mention that in Mayfield main street there is a fine timbered house bearing the date of 1575, which is well worth a little trouble.

How to Make a Set of Photographic Apparatus.

By H. J.

CHAPTER IX.

ENLARGING APPARATUS—(*Continued.*)

As I mentioned in my last chapter that I would give instructions how to make the bellows, I will proceed to do so, as they can be made much cheaper than bought, and it is really very easy to make them, if you only set about it in the right way, and though my way is different from any that I have seen published, yet I was quite astonished at my success in making the first which I attempted, and which I would not be ashamed to show against many of the bought ones. But to proceed to business. The first thing to decide on is the length of the bellows.

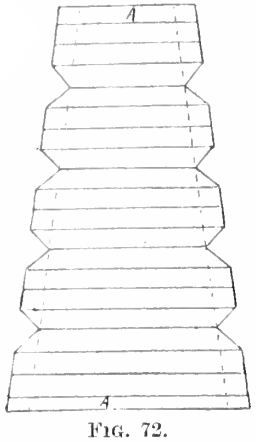


FIG. 72.

For the largest, or those fixed to body of camera, I should recommend an extension of 42 in., and for the others 30 in. will be sufficient. As the same instructions will do for both, I shall in regard to size, etc., mention the larger ones only. For these procure some stiff cartridge paper (or even brown paper will do, but it had better be in a roll to save joining); cut out a piece 54 in. long, and the same width at one end as the body of camera is high inside, and a trifle over half the width at the other end; the taper must be equal on each side, as in fig. 72. Now rule off an inch at each end, and divide the space between into equal parts of about an inch, crease these lines with the back of a knife, so that they will fold easily in the creases, then draw a pencil mark parallel with each edge, the same distance off same as it is between the creases, as dotted lines in fig. 72. Now cut out a notch the width of two creases as shown in drawing, leaving two square at the end (not reckoning the inch ruled off), then a notch, then another two square, and so on to the end. There will be a great many more than shown in the drawing, but that is sufficient to show the proper way. Another piece of paper must be made exactly the same as this in every way, and then two more pieces, the wide end of which is the same as the *width* of camera body inside; these must also be creased, the places for the creases being found by putting the edge of one of these to the edge of one of the former ones, and marking them from it, when it will be found that they come a trifle closer together. After these two latter are creased they must be notched in the same way, with this difference, *that where the former were left square, the latter must be notched.* A glance at figures 72 and 73 will make it clear. Each piece should now be folded in the creases, alternately in and out, taking care to start so that the short creases formed by the notches, and the middle crease in each square, fold inwards, the remainder of course folding outwards. Now having procured some good black twilled calico as wide as possible, lay it flat on a table, and place the prepared cartridge paper on it edge to edge, keeping the ends level so that the creases intersect; they must be laid down, first a large one, then the smaller, then another larger, and lastly the other small one.

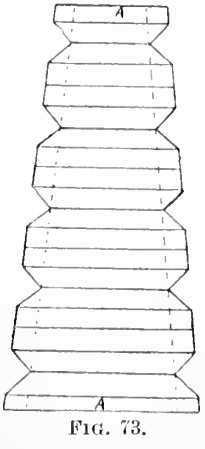


FIG. 73.

The twilled calico can now be cut all round about an inch outside the cartridge paper, after which another piece can be cut like it, as one is wanted for the inside of bellows and one for the outside. One piece of the twill can now be laid flat again, and then paste one piece of the cartridge paper well, and lay it pasted side down on the twill, leaving about 6 in. of the latter projecting beyond the former; paste the other pieces in the same way, and lay them on the twill, each touching its fellow within about an eighth of an inch, and keeping the creases together, so as to follow in continuous lines. It will be found on laying on the last piece of cartridge paper that its edge projects over the twill, which is as it should be. Now paste over the four pieces of paper, and lay on the other piece of twill, allowing it to overlap the paper at the opposite side to which the other piece does, and when you have pressed them well together, bring one end over to the other, so that they intersect in the same way as the others do; press them well down, which is easily done, as they will still lie flat; and when in perfect contact, open out and stand the square pyramid, which it now represents, up on end to dry. This may not seem quite clear on paper, but it is really very simple, as will be found by all who try it. The bellows have yet to be folded, and this is best done before the paste is dry and hard, say about four hours after they are put together, as it will be found that they work then very easily, starting at the bottom and gradually working up, pinching the corners as you go. A bellows body of the size mentioned would cost at least 25s., while if made at home they will not cost above a quarter of the amount, and they can be made in four hours. As the others will be made in the same way, I will suppose them finished, and proceed to fix them. This will be done in the same way as I recommended them to be fixed in Chapter I.; and close back the edge of camera body, the bottom of bellows being fixed to the cross piece M (see fig. 66, in Chapter VIII.) The small end of long bellows will be fixed to the middle part by small strips of wood screwed to it inside, which will hold them by pinching the piece A, fig. 72, between the two pieces of wood.

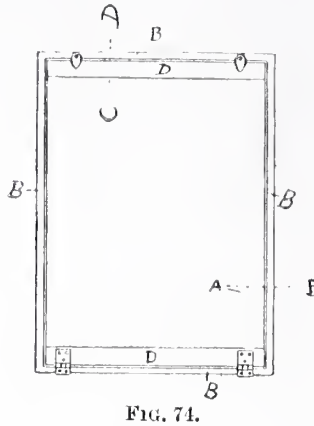


FIG. 74.

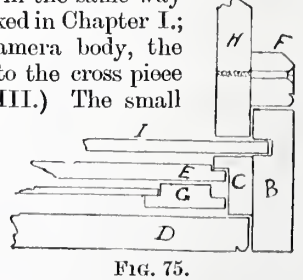


FIG. 75.

The smaller bellows will also be fixed in the same way to both middle piece and front, the strips in the former case being of such a width that they will leave an opening the right size to take the front of ordinary camera, so that the lens need not be detached from same every time it is required for enlarging, but will only require placing in the middle piece, and be held there by turn-buttons. By this method it can be transferred from camera to enlarging apparatus, and *vice versa*, instantly.

We now come to the dark-slide. The back of this is shown in fig. 74, a section through side in fig. 75, and a section through top in fig. 76. To make it, proceed as follows. Make a frame of 2 in. by ½ in. stuff to fit closely round body

of camera; this is shown at B, figs. 75 and 76. A groove must be run round at $\frac{3}{8}$in. from the edge before putting together, for the shutter to slide in, and this groove will have to be cut through the top piece to enable the shutter to be drawn; see fig. 76. When this frame is made fix another frame inside it close up to the groove, as C, figs. 75 and 76. The size of this is $\frac{5}{8}$ by $\frac{3}{8}$ in., the rabbet being $\frac{1}{2}$ by $\frac{1}{8}$ in.; this frame must be fixed to the outer one by screws from the inside. A door must now now be made and hinged to the bottom of the frame, as shown in fig. 74. This can be made from $\frac{1}{2}$ in. stuff, but it had better be "clamped;" that is, a strip of wood about an inch wide glued and nailed on the end of the wider piece so as to prevent the latter from warping; these "clamps" are shown at D D, fig. 74. This door shuts inside the frame, and is fastened by two small turn-buttons at the top. The shutter is best made of "three-ply" fret wood, this being made up of three pieces, the grain of each crossing the others. It will always keep true, and it will only need cutting to the right size to slide easily in the grooves, and to project about an inch above at the top, where another piece of the same material can be glued and screwed on at each side, to prevent light from entering through the slot.

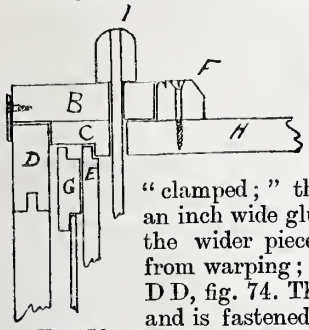


FIG. 76.

The shutter can be hinged in the same way as shown in my paper on dark slides, so as to fold down when drawn, or it can be allowed to stand up, though the former is decidedly the better plan, and not much trouble to do.

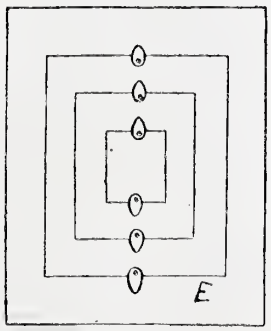


FIG. 77.

The board to which the paper is fixed for exposure can be made next. I make this up of a series of frames rabbetted so as to fit one in the other, as shown in fig. 78, and fastened, as shown in fig. 77, by small turn-buttons at the back. This enables any size of paper to be stretched tightly, by placing it on its corresponding size of frame, and pressing the others over it, thus forcing the edges of the paper into the joints. It will be seen that it is necessary to make the frames about a quarter of an inch smaller than the stock sizes of paper; any size can then be fixed at once, and much better than by using drawing pins, and other makeshift methods.







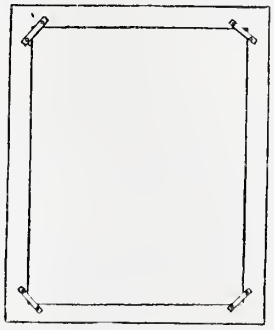
The outside of the exposing frame must be rabbetted, as shown in figs. 75 and 76, at E, where it is in position for exposure. It will be a good plan to make this of the three-ply fret-wood as well, though plain wood will do. The rabbets can be cut out with a sharp chisel.


FIG. 79.

The focussing screen is the next part to be made. It is a square frame, as shown in fig. 80, the ground-glass being fixed in with small brass corner pieces, and the outside edge rabbetted all round the same as the exposing board. The rabbet for ground-glass must be made so that the surface of glass and surface of board are in the same plane, otherwise correct focus will be impossible; for this reason the focussing frame is made of thicker wood than the board, or there would be no room to fix the glass in. In order to keep focussing screen and exposing board pressed up to their rabbets, four springs must be fixed to inside of door of dark slide similar to fig. 79; they are simply fixed with one screw through the middle, so that explanation is unnecessary.

FIG. 78.

The dark slide is now finished, but I should have mentioned that the bottom part of it must only come down level with bottom of cross piece M (fig. 66, in Chapter VIII.), as when closing up the apparatus the sliding pieces which carry middle piece and front will project under it, and they should now be pushed through as far as they will come, and hinged so as to fold up behind the dark slide; the whole will then fold into a thickness of about 14 in.


FIG. 80.

Small strips F, figs. 75 and 76, must now be screwed round body of camera, $\frac{3}{8}$ in. from edge, to form stops for dark slide, and two small hooks and eyes put in on each side to hold it in its place. And this I think completes the camera as far as necessary for use. It can be stained or polished, to suit the maker's fancy, and, if preferred, leather instead of twill could be used for making the bellows, which would no doubt make it look better, and also make a more durable article, but with ordinary care it will last a lifetime, as I have described throughout, and I think no one will ever regret the time and money spent in its making. I myself consider this the most useful paper of the series, not only of those already published, but of those to come, and I expect more of my readers to be making this apparatus than any of the others. In the dark-slide it must be noticed that the focussing screen and exposing board both fit in one rabbet, and after focussing, the screen must be taken out and placed at the back of exposing board; when the door is closed the whole will be tight together. I have arranged it in this way so that there shall be no loose parts when the whole is packed up, and all the difference it makes is about a quarter of an inch in depth of dark slide:

Below is a list of fittings required to complete the apparatus, in addition to those given in Chapter VIII.:—

	s.	d.
Two pairs of hinges for sliding parts of baseboard	0	8
One pair of hinges for door of dark slide	0	4
One dozen turn-buttons for exposing board, door of dark slide, and lens	0	9
Eight brass strips to hold ground-glass and negative	0	8
Four springs fixed to door of dark slide	0	4
Black twill for bellows, 1 yd. wide ..per yard	1	4
Imperial leather for ditto, 1¼ yard wide .. „	2	0

DESCRIPTION OF FIGURES.

Fig. 72. Side of cardboard for bellows ready for putting together.
„ 73. Top ditto, ditto.
„ 74. Back of dark-slide.
„ 75. Section of ditto, on line A B, fig. 74.
„ 76. Ditto, ditto, on line C D, fig. 74.
Fig. 77. Exposing board.
„ 78. Detail of joints of ditto.
„ 79. Spring on inside of slide door.
„ 80. Focussing screen.

REFERENCES TO LETTERS.

A. Pieces left at end of bellows for fixing.
B. Frame of dark slide.
C. Inner frame of ditto, to take focussing screen and exposing board.
D. Door of dark slide.
E. Exposing board.
F. Strips round camera body to stop dark slide.
G. Focussing screen.
H. Body of camera.
I. Shutter of dark slide.

Stereoscopic Photography.*

BY GEO. A. THOMASON.

IT is with a feeling of diffidence that I address myself to this subject this evening. In the first place, the last time it was discussed before the Society I found myself totally opposed to it, and it is a somewhat anomalous position to place one's self in, to be found advocating, at a meeting of this sort, the very thing one had opposed previously. In the next place there are gentlemen in the room who know far more about the subject than I do, and who are better qualified to speak upon it than I am. The difficulty the Council had, however, when I was selected to read the paper was this, that no matter how diffident I might be they were still more so; and that must be my apology for any shortcoming which may appear in my treatment of the subject.

Some of our members have obtained a great deal of amusement out of this subject by chaffing those who advocate its popularity. One gentleman, for instance, avers that it is as dead as Queen Anne. He, however, is careful not to say to which Queen Anne he alludes, because it is very evident that stereoscopic photography is not dead. I am reminded of a line or two from a song lately very popular, "It may have been asleep, but it's not dead yet." On the contrary, its claims are being urged more every season, and I venture to predict that it will yet become the most popular form of amateur photography. Another joke made at its expense is, that in instantaneous pictures made by its aid moving figures are so tantalising that a man in the act of walking presents such a realistic appearance that one feels a desire to drop a penny in the slot to make him move, or even to take more drastic measures still. Well, gentlemen, I claim that that is an additional charm to the stereoscopic worker, viz., to depict nature as it really is, or, shall I say, as we really see it. I hope to prove to you before I finish my paper, that it is impossible to see an ordinary photograph adequately represent any subject. A friend who is present remarked a short time ago in the club-room, that we got our results by means of a trick, and that it was not a genunine representation. Well, gentlemen, it is for me to prove that it is not a trick, but the most correct and the only truthful way of delineating a view or picture upon a plane surface. If you wish to produce in a natural manner several planes, there is, so far as I know, no other way of obtaining the result than by stereoscopic photography. If I hold a book in my hand at arm's length edgewise, and close one eye, I see the edge of the book only, but if I open the other eye, still holding the book in the same position, I see not only the edge, but also a portion of the side of the book, which proves that with two eyes two distinct pictures are formed, which, however, coalesce either by a mental act, which is the most likely theory, or from some connection between the nerves of the retinæ, which at present has not been discovered; many theories exist, but as they all differ it is no part of my duty to trouble you by discussing them. It seems to be upon the whole considered most probable that the power of forming a single idea of an object from a double impression conveyed by it to the eyes is the result of a mental act. If you hold up one of your index fingers close to the eye and one farther off, you will see that by looking at the one farthest away with both eyes, you really see three fingers. In the same way looking at the nearest one you still can see three fingers; *i.e.*, by bringing the optic axes to bear upon the near finger the one farthest away is brought to a different part of the retina in each eye, and two fingers are seen behind the one which is really in focus. These experiments might be repeated in numerous ways, but I think I have established the fact that binocular vision produces two different impressions which by a mental operation give rise to only one sensation. Now, if we look with both eyes at an ordinary photograph, *i.e.*, taken with one lens, it is evident something must be wanting to adequately represent the subject to us, and will agree that there is in every photograph so taken an appearance of flatness which can only be overcome by aerial perspective; and so when the distance is almost obliterated by atmosphere, and first a dim sensation of the mountains or trees or whatever may be at the background of the picture presents itself, it is seized upon as a triumph of photographic art, often by the very men who have done all they can by the use of isochromatic plates and yellow screens to overcome what they know perfectly well is not a representation of nature in its best aspect, but which is the best result they can accomplish. The fact also that to look at a photograph with one eye only, and then preferably either through a tube or shaded by the hand will give a partially stereoscopic effect, all goes to prove that for either the most correct representation or to afford the greatest pleasure to our friends or ourselves, the use of the stereoscope is not only not a trick, but the only legitimate way of showing or looking at our pictures when done. You may ask, "If then all you say is true, how is it the instrument is gone so much out of fashion?" or, as I put it in commencing, "been asleep." That is easily answered. There is no doubt that great care is necessary in mounting the pictures, which, to an amateur, is only increasing his pleasure in the work and an incentive to excel, but which the tradesman who gets the work done in the cheapest manner possible accomplishes by employing probably young persons who think but little and care still less as to how the slides will look when placed in position. It is not fair to the art to judge of it by its past history. For years I could never look with any pleasure through a stereoscope, because, in order to make the pictures overlap or combine, I had to strain my eyes almost out of my head, and the consequence was that after looking at about half-a-dozen views, I had such a headache that I was compelled to give up looking at any more. A few months ago, an American called upon me with a new form of stereoscope, and I found that it was a wonderful improvement on any I had ever seen before, but still there was a slight strain, and I found at last that it occurred more with some pictures than others, and, in fact, with some there was no strain at all; and upon measuring the distances they were mounted apart, I soon found out the reason. More strain was occasioned by those mounted 3 in. apart, and some were even over this, which made it worse. I soon found that those at $2\frac{3}{4}$ in. were quite normal and easy to look at. I believe that $2\frac{3}{4}$ in. is better for many people, but as I can see $2\frac{3}{4}$ in. views quite easily, I prefer that width, as, of course, I can get by means of the $\frac{1}{4}$ in. a larger picture and more subject. Perhaps at this stage it would be well for me to illustrate by a diagram what the action of the lenses in the stereoscope is. I should say that the form of instrument as now used was invented by Professor Brewster. A double convex lens is divided across the middle, and the two halves are set with their edges in juxtaposition. In the "Stereoscopic Manual," by Chadwick, which is very interesting and useful to all workers in this branch, he points out that it is possible to construct a stereoscope without lenses at all. He says in considering the size of the pictures and the dimensions of the box, "When we look at a tree in nature a mile away, we view it with so little convergence of the optic axes as to be termed practically parallel vision, for it must be remembered that if we observed the tree with a greater convergence of the optic axes, we should not estimate it at its true distance, but at a nearer distance, and as our eyes are only $2\frac{1}{2}$ in. apart, it is clear that the image of the tree in the two photographs must not be more than $2\frac{1}{2}$ in. apart. This dimension, then, settles the size of the photograph at not more than $2\frac{1}{2}$ in. each in width.

With normal vision we cannot conveniently observe anything distinctly at a nearer distance from the eye than 8 in., and the box must be at least 8 in. long in order to accomplish this. It was pointed out the last time the subject was discussed in this room, I think by Mr. Griffiths, that even this simple form of stereoscope was unnecessary, and that with practice it was possible to get the effect by holding the pictures in the hand, and by diverging the eyes until parallel vision was obtained. This I tried at for a long time, and at last succeeded in getting the effect, but I thought there was too much strain upon the eyes, and no doubt there was, and for this reason; if we wish to obtain the best result from a photograph as to the natural size and perspective, whether large or small, we should view them at a distance from the eye equal to the focus of the lens we have used in taking the view, and it is for that reason that most people prefer whole-plate size, as the lens usually employed is about 10 in. focus, which may be considered the normal focus of the eye. Now, as it is necessary to use a lens of about 5 in. focus for stereoscopic work in order to get in the usual angle of view, and by that I mean about the same amount of subject as that obtained with an ordinary quarter, half, or whole plate lens, it becomes necessary to get the assistance of a lens in order to procure the correct proportion, because it is evident that if the picture is produced by a 5 in. focus lens, and we observe the print at 10 in. from the eye, it would only appear one-half its true diameter. So far as I can see, the object in placing the lenses in this position is to give parallel vision as well as to magnify the print to its proper size. You will see by the diagram which I have prepared, that the ray of light is caused to slightly diverge, and thus place the optic axes in the same position as when looking at the view itself; for this reason the lenses should be mounted not more than $2\frac{1}{2}$ in. apart from centre to centre, as the normal distance between our eyes is approximately $2\frac{1}{2}$ in., and, consequently, if the lenses are farther apart, as is the case with many stereoscopes, only the thin edges of the glasses are used and the diverging lines are proportionately more acute, and, consequently, the true distance is not appreciated and objects in the picture convey the impression of something much smaller than is really the case. While this objection may also be urged, I think that the more the lenses converge, or, as they are used in the stereoscope, diverge, the greater the strain will be upon the eyes. We may now leave the theoretical for the more practical part of the subject, and I first call your attention to the convenience of this work over ordinary photography. Most of you will, I think, agree with me that quarter-plate work is too small for

* Read before the Birmingham Photographic Society.

any purpose except lantern-slide making, snap-shots in the hand-camera, or carte-de-visite portraits. Half-plate work is very little better. The views are too small to frame for pictures and too large to mount in a scrap album, and, in consequence, the majority of the prints are left to tumble about until they are spoilt. With whole-plate work it is different. You may with this size view decorate your walls with pictures worth looking at, but at what a cost—plates, paper, chemicals, mounts, and frames, besides the hard labour entailed, and then after carrying the apparatus five or six miles and finding nothing worth exposing upon! That is one of the pleasures of whole-plate work. Now take the stereo camera. You can use a small and lightly-made camera, a light stand, you can use only one lens if desired, and take a quarter-plate picture for a lantern slide, or if you wish to get a half-plate picture you have only to adapt one lens and remove the dividing screen, and you have with your 5 in. lens a wide-angle picture, or you can carry a 7½ in. lens and place in your camera a front for an ordinary view. But why take all that trouble? Suppose you see a nice bit and you want to get a lantern slide or quarter-plate size for a pocket album, or a stereoscopic view for the drawing-room table, you have it all at once in the one negative. But I can carry you still further. Suppose you think you would like a half-plate picture framed for the breakfast-room or nursery walls, or a whole-plate or 12 by 10 for the drawing-room. All you have to do is to enlarge the subject on bromide paper and you have it. Now I ask you, Mr. Chairman and gentlemen, can any other camera give you all these advantages? and I am sure you will agree that it is impossible to get the same results in any other way. There is nothing for you to re-learn or to forget before you can produce satisfactory stereoscopic slides. The negatives require a full exposure to prevent chalkiness, and in mounting the slides you have to transpose the pictures from left to right in order when looking at the view you may place the right-hand side picture as taken before the right eye, which, it will easily be seen, would not be the case unless transposed, from the fact of the pictures being taken inverted. As I mentioned before, I take some object at the middle distance and measure 2¾ in. from centre to centre, carefully cut the two pictures top and bottom before dividing them, and with ordinary care in mounting, a perfect result is obtained. I place a straight line across the mount as a guide both for the centre and also to keep the prints upright. I have not thought it necessary to demonstrate at any length before you, because, as I said before, there are no new dodges to learn in order to assist you to success. I hope I have succeeded in removing any prejudices which may have existed in your minds against the subject in discussion, and also in setting forth a few of the pleasures which we who follow it enjoy. I have only to say in conclusion that I do not think any one who has followed it has ever grown tired and given it up entirely. I think all will agree that a stereoscopic picture properly taken, mounted, and viewed is indeed a thing of beauty and a joy for ever.

Exhibitions.

Society.	Entries close.	Opens.	Closes	Address of Secretary.
P.S.G.B.	—	Sept. 26	Nov. 10	The Assist. Sec., 5a, Pall Mall East
Bedford & Dis. Camera Club	Sept. 20	Oct. 11	Oct. 13	W. E. Ison, Hughenden, River Cres., Bedford
Stockport	—	Oct. 17	Oct. 23	B. S. Harlow, Buchan House, Heaton Norris, Stockport.
East London Photo. Soc. ...	Oct. 18	Oct. 24	Oct. 25	M. A. Wilkinson, 28, Shacklewell Lane, Kingsland
Todmorden Scientific Assoc.	—	Nov. 5	—	Jno. T. Binns, 3, Garden Terrace, Todmorden
Hackney Photo. Soc. ...	—	Nov. 15	Nov. 17	W. Fenton Jones, King Edward Road, Hackney
Leytonstone Camera Club...	Oct. 25	Nov. 10	Nov. 12	A. E. Bailey, Rose Bank, South West Road, Leytonstone
Brixton	—	Nov. 17	Nov. 19	F. W. Levett, 74, Geneva Road, Brixton.
South London	—	Nov. 24	Nov. 26	Chas. H. Oakden, 51, Melbourne Grove, E. Dulwich
Exeter Amateur Photo. Soc.	—	Nov. 24	Nov. 26	Rev. J. W Sparshatt, Fairfield House, Alphington Road, Exeter

PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN.

Second Notice.

In various parts of the exhibition there are examples of portraiture by the aid of the single lens, and there cannot be a doubt that for large heads the effect is more artistic than can be gained by most of the portrait lenses in use, for, instead of the sharp focus on one plane, there is no real focus anywhere. Of course, the rectilinear lens gets over this difficulty, but even with the full aperture it is too sharp and the definition frequently too great for the best effect; and the larger the head the more is this felt. E. Lambert exhibits three men's heads taken with the single lens, which has been stopped down considerably, for they appear perfectly sharp. They are skied, but though near inspection is not possible, there is evidence of undue retouching. This objection cannot be urged against the work of J. T. Bergheim, several of whose heads are among the most artistic productions in the gallery. They are evidently produced by a single lens not very much stopped down, for, though there is no sharpness, there is, on the contrary, no fuzziness. In fact, there is all the sharpness a painter would desire in a 4 in. head, They are simple in treatment and most effective in light and shade and the rough paper on which they are printed still further heightens their artistic effect. The "Circassian Slave" is a fine model, well posed, but the diaphanous drapery is far too scant and appears plastered on the figure. "A Daughter of the Nile" is gracefully posed, and happy in the lighting, but the palm leaves have a spider-like effect in the background and take away somewhat from the repose of the figure. The whole of this gentleman's work is ambitious and evinces strong art feeling.

Karl Greger has departed from the red tones he usually employs, and his work, to our mind, has gained immensely by the change. He still depicts pastoral subjects, and sheep are again his very good friends. His *mise-en-scène* is usually of the simplest, and the hour best loved by him for his work is when the sun is far through his daily course. The clouds are always well selected and introduced into his pictures with great technical skill. The "Marsh Idyl" is a good illustration of his power in this direction. The subject is of the simplest—a flat country, a small bending water-course, and a flock of sheep, backed up by a cloudy afternoon sky. The clouds make the picture, for their perspective carries the eye through the picture to its most distant parts. Without the sky the picture would be tame; with it the picture is perfect. "Homeward" is a picture of sheep slowly trudging along a lane. The air in their immediate vicinity is filled by dust or steam from their heated bodies, and the detail of the hedges and trees is blotted out just where the flock is moving along. "Sunset on the Lower Thames" is a very effective picture, but the water in the foreground is too white for sunset, and with the sun so low down there must have been a cast shadow from the crumbling bank on to the water; the picture, however, is very striking, and few people will discover this slight discrepancy. The series of pictures by this very earnest worker have justly earned a medal.

P. Ennis has sent some gelatino-chloride pictures, not calculated to advance the process in the estimation of the public. Several of them are well chosen, but all are marred by foxy-toned and most ghostly shadows.

F. Hollyer's very striking series of portraits of men distinguished in arts or letters demand careful inspection. They are small—not larger than half-plate—but are made important by flat frames of darkish wood relieved by bands of gold. These are placed just below the line, and form a long row, and they are well relieved by the dull red cloth below them. The pose in every case is quite unconventional, and as a rule they are very simple in treatment. In no way do they resemble the conventional work turned out by the every-day photographer; but then Hollyer could not do this regulation sort of work if he tried.

B. Gay Wilkinson has this year surpassed himself. A thoughtful and earnest worker, his pictures have always commanded attention, but we think it must be conceded that in the present exhibition his work shows a great advance in art quality. The pictures of this year are printed on rough paper, the texture of which aids in the production of some of his effects; and in one of them the paper is abraided apparently to still further them. On observing to a friend that in letting his art betray itself he had missed his mark, we were assured by one who knew, that it was an accident, due to the chafing of the paper during washing. We are glad to believe this, for the photograph is so beautiful that it did not need any artifice to make it better. It is a picture made up of the slenderest materials—only a sluggish river in the distance, and a marshy expanse in the foreground, evidently buried by every high tide, for here and there it is covered by rank vegetation. The happy chance of a glorious evening sky has made the picture, for fanlike rays stream out in every direction from under a heavy cloud, and touch with golden tips the marshy distance, and the sandy mud is lit up in various places by the strong reflexion of the sun-lit clouds. "The Estuary of the Blyth" shows a half-sandy, half-muddy shore of a shallow Essex river, with a long line of fir trees in the distance—not very striking material for a picture, might reasonably be said. A beautiful evening sky dappled with mackerel clouds, however, completes the scene and puts all harmony. One of the greatest charms in Mr. Wilkinson's work to a lover of truth in art is due to the fact that the sky absolutely belongs to the scene, and is not printed in from a separate

negative. The lights and shadows, therefore, are always in their right places. The medal picture, "Westminster," is a daring attempt that few would have hazarded. He has succeeded, however and the result well deserves the award. The setting sun is behind the Victoria Tower, which looms up black and gaunt against the evening cloudy sky; in fact, there is no detail in the whole gigantic block. The Thames expresses unceasing motion, and there is a weird palpable atmosphere pervading the scene. Perhaps the best illustration of what may be done in picture making out of slight materials is shown in "The Peaceful Evening Hour." It is made up of a house with no pretension to beauty, and a clump of fir trees. The picture is a narrow, long one, for an uninteresting foreground has been cut away. The setting sun, accompanied by long horizontal clouds, makes up the rest. The repetition of the horizontal lines, and the emphasis given to them by the long proportions of the picture prove Mr. Wilkinson to be one of the most advanced artistic photographers of the day.

F. Boissonnas exhibits a picture he calls a "Sunset Study." It is a picture of considerable dimensions, and the catalogue announces that it is a direct photograph on an orthochromatic plate. Surely with such an aid to correct rendering of colour values into monochrome, it ought not to have been necessary to work more or less all over the picture, with fine hatching of light pigment, apparently to kill blackness. The photograph is striking. A group of women at work in a roughly furrowed field, and one of them with rake in hand stands out sharply against the setting sun, and the clouds are busily engaged in the important business of putting him to bed. All the figures are dark against the evening sky, and of necessity there is little detail. The picture is low in tone, and the inspiration has evidently come from Millet's "Angelus."

W. Bedford has made a striking departure from the well-known work of past days. All his pictures are in sepia, and the brown colour is still further intensified by the brown wood frames. There is a small band of gold to separate the brown frames from their brown contents, but the first impression is that the pictures are too gloomy. There is evidence enough, however, on examination that several of them are taken in bright sunlight. The remarks on framing in last week's notice apply with force here. All the pictures in the neighbourhood are killed. The Norfolk rivers and broads have supplied the materials for the series. The well-known wherries, with their gigantic sails, are well rendered. The most perfect of the series is the one with the dense bed of rushes for a foreground. The almost cream tints of the lighter portions of the clouds would have been helped by an india tint, and the white margin beyond would have better helped to separate each picture from its companion, and then the pictures in the neighbourhood would not have suffered so severely.

There can be no doubt that rough paper helps very materially to lighten and give transparency to shadows; let all credit therefore be given to Gale, whose pictures prove that he can hold his own without the aid of this well-known art method. "The Incoming Tide" is a little gem. A marshy foreground, and a line of stakes here and there half covered by tangled weed and a distant river; but with the evening sky all is made calm and reposeful. Indeed, it is a picture of perfect harmony. "An East Country Quay" just misses being a very perfect picture. The long shadows thrown on the water by the boats make striking effects of light and shade; but the black mass in the immediate foreground is so out of harmony with the rest that it misses its purpose, and the beholder can only with difficulty get his eyes away from the black buoy in order to enjoy the more beautiful parts of the picture. "Afternoon Repose" is another example of Mr. Gale's well-known effects. A herd of cattle occupy the middle distance, and are ruminating, apparently thinking of nothing in particular. The hill ranges which fill in the scene are veiled and mysterious. "Flatford Bridge" is an artistic study of light and shade. This bridge is well known for its picturesqueness, and has been frequently photographed, but this picture by Gale is by far the best we have seen.

W. M. Warneuke's "Landscape" is distinctly fresh in treatment. It is of large dimensions, and the birches and bracken are given with quite a painter's touch. The photographer's sharpness of rendering is not here, but there is no out-of-focus fuzzy effect for all that. It is a pity, with all else so good, that the hill-line arrests the eye with its undue sharpness. "A Corner of the Farmyard," by E. Spencer, is a simple, unpretentious subject—a small pond backed up by farm buildings, and a congregation of ducks and ducklings.

H. J. Godbold has more than once photographed domestic scenes in which a crippled ship has played chief part; but we think never such a striking one as his present picture called "A Rocket to the Rescue." A ship is ashore, and though the storm has apparently subsided, the long rollers are still potent for mischief. That it is still blowing a stiff gale is shown by the action of the dark figures on the beach, for most of them put their shoulders to the wind. The point of interest is the rocket, with line attached, speeding its way on an errand of merey. The whole scene is dark and gloomy, and the air heavy with the salt spray.

Reviews.

Die Photographische Camera und die Momentapparate. By Dr. J. M. Eder. Published by Wilhelm Knapp, Halle a/S. Price 10s.

This work forms part five of vol. i. of Eder's famous Ausfuhrliches Handbuch der Photographie, and is the most complete work yet written on photographic apparatus.

The author describes the various leading commercial forms of instantaneous shutters, the method of estimating their speed; the various forms of cameras for ordinary and special work; detective cameras for all kinds of different purposes; and gives a complete description of the various apparatus used by Marey, Muybridge, Auschutz, etc.

This is the most complete work of its kind yet written, and is illustrated by nearly 700 woodcuts in the text, and three process blocks from work done with the telephotographic lens. The book is well printed, and forms a handsome work of over 700 pages.

The Telephotographic Lens. By T. R. Dallmeyer, F.R.A.S., M.R.I., etc. Published by J. H. Dallmeyer, Ltd., 25, Nowman Street, Oxford Street, W. Price 1s.

In this brochure of thirty pages Mr. T. R. Dallmeyer has collected all the useful and interesting matter relating to his telephoto lens, and the whole forms a very clear and useful handbook to the use of this particular lens. Six very good collotypes show the advantages to be gained by the use of this lens over the ordinary in the magnification of distant objects and the truer rendering of distance.

La Photographie en 1892. By MM. Niewenglowski and Reyner. Published by Ch. Mendel, Librairie de la Science en Famille, 118, Rue d'Assas, Paris.

This little volume, which is dated 1893, forms a brief resums of the leading advances made in photography during the current year. The international exposition of photography held at Paris gives the authors the text for the chronicles of the advances made. The statutes of the Union Nationale deé Sociétés Photographiques de France are given and a list of French photographic publications.

The Hand-Camera, and How to Use it. By Walter D. Welford. Published by Iliffe and Son, 3, St. Bride Street, London, E.C. Price 1s.

This work is practically a reprint of articles which have appeared in one of our contemporaries. The author discusses the various principles adopted in the construction of commercial hand-cameras, and although of course his own views are strong on this point, he states the pros and cons of each particular device fairly and honestly. Some very useful and practical hints on the use of a hand-camera are given, and the work is illustrated by several process blocks of snap-shots, and of these one, "When the red sun sinks to rest," is utterly false and untrue, and would be far more suitably described by some such claptrap title as "Moonlight," or "The sable garments of the night," for it is about as black and unlike a sunset as it is possible for anything to be. On the subject of developing some very good hints are given, and the author comes to the conclusion "that, up to the present, there is nothing to touch pyrogallic acid for the development of hand-camera shots."

In several places in the book some curious statements are made, and one in particular on p. 27—when discussing the pros and cons of double *v.* single lenses—struck us as requiring elucidation. Mr. Welford says, "The single combination will not only be quite quick enough, but will probably give truer renderings of nature. It gives a much flatter field, and therefore the alteration of perspective and angle, which the stopping down of a doublet to obtain the same degree of sharpness generally leads to, is avoided." It will be noted that we have here one given sized plate, and we must confess we were not aware that stopping down a lens altered either the perspective or angle still we live and learn.

The Practical Photographer's Label Book. Published by Percy Lund and Co., Memorial Hall, Farringdon Street, E.C. Price 6d.

This is certainly the best label book which has yet been issued. It contains sixteen pages of gummed photographic

labels for all the leading chemicals, printed in clear, distinct type and varnished, an improvement of great practical value. On all the labels for poisonous chemicals is printed in small characters the antidotes for the same. A few blank pages are also included for any special or out-of-the-way labels.

Apparatus.

SCOTT'S DARK SLIDE.

Mr. W. I. Chadwick, of 2, St. Mary's Street, Manchester, has sent us a sample of Scott's patent dark slide. This is a single slide of extremely light construction, with pull-out shutters. On pulling up the slide, the bottom of the slide turns back to allow of the insertion of the dry plate.

Like most of Mr. Chadwick's specialities, this is at once practical and efficient, and will be of great service to all workers and hand-camerists especially.

Societies' Meetings.

Hackney.—Meeting held on 27th ult., Mr. Walter Potter presiding. The Hon. Secretary announced that the judges in the forthcoming competition would be Captain Abney, Colonel J. Gale, and Mr. Ralph W. Robinson. Work was shown by Messrs. Pollard, Nunn, Dean, and the Hon. Sec. From the question box:—Does bromide paper lose rapidity with age? Mr. Barker had used some two years old with little loss of rapidity. Mr. L. J. Beckett had used some four years old. Another question was, Can I use amidol without bromide, and can I over-develop with it. The Hon. Sec. said he had used it without bromide, and had found it work satisfactorily. Mr. Sodeau said it was possible to over-develop with amidol. A third question was: Should chloride of gold be kept alkaline in solution? Mr. Sodeau said: Be slightly acid, but it was rarely ever done. The Hon. Sec. then gave a lantern lecture on his holiday in the Isle of Man (in conjunction with Mr. Dando), during which over eighty slides were shown.

Harlesden and Willesden.—A meeting took place on the 26th ult., J. Naylor in the chair. A lengthy and interesting discussion took place upon printing processes for various negatives. Those members who had received samples of the Paget Prize plates distributed at the last meeting spoke in very high terms of them. The President commented upon their high sensitiveness in dull weather. An excursion to Windsor was arranged.

Liverpool (Am. Phot. Assoc.)—The monthly meeting was held on the 29th ult. The President, Mr. W. Tomkinson, occupied the chair, and there was a very large attendance, attracted, no doubt, by the announcement that Mr. George E. Thompson would deliver his new lecture, entitled "Hill-top Cities of Etruria," illustrated by lantern slides from negatives taken by the lecturer during the spring of this year. Mr. Thompson holds such a high position in the estimation of the members, both as a lecturer and as a photographer, that he is always sure of a crowded audience. After the election of seven new members and a report by the President upon the recent excursion to Shrewsbury, Mr. Thompson commenced his lecture, of which the following is a synopsis:—"Orvieto, its famous cathedral, its old gates, and precipices. Viterbo, ancient walled town, fountains, buildings, and monastery of La Quercia, grand old garden. Excursion to Caprarola. Montefiascone, and down to Lake Bolsena, basaltic columns, old town. Orte, on the Tiber. Narni, ruined bridge quaint streets. Segni, on its crags. The monastery of Monte, Cassino. Corneto, Etruscan tombs 2,400 years old, museum, sarcophagi, Etruscan pottery. Carrara, marble quarries, grand scenery of the marble mountains, a marble Venus come to light." The lecture was most interesting and instructive throughout, and the slides were of the highest quality, calling forth frequent bursts of applause. This was particularly noticeable when the pictures of the Carrara marble mines were being shown. The enormous extent of these considerably surprised most of the members, and the beauty of the marble mountains was expressed in the photographs with wonderful realism. At the close of the lecture, Mr. B. J. Sayce proposed a hearty vote of thanks to Mr. Thompson, and this was carried with acclamation. On the motion of the lecturer a cordial vote of thanks was also given to Mr. F. Anyon for the admirable way in which he had worked the Society's new lantern. It is a matter for congratulation and was much commented on, that although the large room was crowded for about two hours, the temperature and atmosphere were most comfortable and agreeable throughout, thanks to the efficient ventilation and the electric light.

Liverpool (Camera Club).—The usual meeting was held on the 28th ult. in the rooms 128A, Mount Pleasant, Mr. W. Haywood in the chair. The subject for the evening was "Hints on the Manipulation of the Lantern," by Mr. T. Edwards. Mr. Edwards had kindly brought his own lantern, which he fully described, and showed many little improvements which the lecturer's large experience had suggested. Mr. Edwards then proceeded to explain the working of the lantern, describing every particular and conveying many useful hints to the members. The lecturer afterwards passed through the lantern a number of slides brought by various members. The first smoking concert of the winter session is to be held on Wednesday, 12th October.

London and Provincial.—At a meeting held on the 29th ult., Mr. John Barker in the chair, Miss C. W. Barnes was duly proposed as an honorary member. The following question was found in the box:—Will anyone give a reliable formula for a rapid emulsion, the best method of breaking the same up and washing it in large bulk?" the answer to which was deferred to the next meeting. Mr. Haddon said that he thought it was the duty of every member to correct statements made in the journals, and drew attention to a paper by Cadett in Cadett and Neal's *Dry Plates* on "Ammonia," and after referring to the loss of bulk on mixing alcohol and water, said that ammonia and water, when mixed, did not condense but increased in bulk, and that Cadett's statements, therefore, required alteration. Mr. H. Snowden Ward showed five very fine studies sent to him by Shapoor N. Bhedwar, which represented the initiation of his son as a Parsee priest, and which were correct in every detail of the ceremony. The Secretary then read a paper by Mr. G. T. Harris on "Gelatine Plates for Lantern-Slides," which will appear shortly in our columns. Mr. Barker showed some very fine negatives made by the albumen process over thirty years ago. A desultory conversation then took place on drying cupboards.

Leigh.—The annual meeting was held on 29th ult., the President presiding. The balance sheet was passed unanimously with a good balance in hand. Mr. Stephens was again elected President, with Messrs. James Ward, B.A., R. B. Mawson, T. L. Syms, Vice-Presidents, Messrs. J. Battersby, J. Berry, W. Crouchley, W. Hampson, T. G. Hirst, and R. Leigh Council, with Mr. Haddock Treasurer, and Mr. W. R. Moore Secretary. The winter programme was arranged, and Messrs. Miles Burrows, A. E. Bennett, and T. Peters were nominated members.

Phot. Soc. Great Britain.—A technical meeting was held on the 27th ult., Mr. W. England in the chair. The Chairman announced that the business of the meeting was the exhibition of the apparatus on view in the Exhibition. Messrs. Watson and Son exhibited a new studio stand for large cameras, the back and front of which could be raised or lowered together or separately, by one handle. It could be fixed in any position, moved easily and smoothly on castors, and levelled for an uneven floor. They also showed an improved form of studio camera, with axial swing back, side swing, and special repeating back and dark-slides; a 10 by 8 Acme camera, with aluminium fittings, weighing about 4¾ lb. Mr. W. Sanders exhibited his Photoscope, an opera or field glass, which could be converted into a photographic camera containing twin photographic lenses and finder, time and instantaneous, metal roll-holder for twenty-four exposures, focussing screen and glass, the only projection being the trigger of the shutter. By using one tube of the marine glass as a finder the object could be focussed and the picture taken while still visible through the glass, the time of exposure being regulated at the moment of viewing the picture, the shutter being always ready either for time or instantaneous exposures. Mr. J. D. England showed his film carriers, in which the iron ends were replaced with aluminium. He also placed before the meeting some specimen negatives on photo-mechanical plates. Mr. S. H. Smith (Smith and Son) exhibited and described his patent plate washer, which was provided with a sloping bottom, the plates being washed films downwards; the arrangement of the water inlet, he claimed, insured a thorough circulation of the water. There were also exhibited Messrs. Morley and Cooper's long-extension half-plate camera, with Smith's patent shutter springs, Messrs. Newton and Co.'s aluminium sliding-leg tripod, fitted with Elmer's patent levelling head. Mr. W. Goode explained the action of his self-adjusting tripod head. Mr. Tottem (Messrs. G. Houghton and Son) showed the Shuttle hand-camera, Dewe's patent photo-chromoscope for exhibiting transparent photographs, a combination pocket-knife and diamond, and a rotating table with clock-work arrangement for vignetting. He also showed an interchangeable leaf album, the covers of which presented the appearance of an ordinary album, no button or tapes being visible. Mr. J. R. Gotz exhibited his new changing-box for films, with special dark-slides for use with same, and passed round negatives which he had taken with his apparatus. He showed the method of changing the films, which is effected by introducing the hand into the interior by means of slides. He also displayed a whole-plate central swing camera, fitted in aluminium, Atlas-pattern tripod and Constant and Bijou shutters, with diaphragmatic fittings, both the ordinary pattern and the twin form for stereoscopic use. Mr.

Sinclair, representing Messrs. Adams and Co., exhibited their Lightning camera stand, the Vesta camera, the new Adams changing-box, and also their Pantascope, for viewing transparencies. Messrs. R. and J. Beck's exhibit included the Frena hand-camera and Bynoe printing-frames; also celluloid dishes, with a receptacle at one end to hold the developer when the dish is held vertically to examine the negative. There were also shown Messrs. Archer and Son's Ideal optical lantern, Taylor, Taylor, and Hobson's Standard lens fittings and adapters, Nameit, for producing titles, etc., on prints, the Dresser hand-camera, the shutter on which works between the lenses, and a case of lenses by Messrs. Swift and Son. A vote of thanks was passed to those exhibitors who had explained their apparatus, and the meeting terminated.

North Middlesex.—On 26th ult., Mr. J. C. S. Mummery in the chair, one new member was elected, and about forty members were present. The Chairman introduced Mr. E. J. Wall, who discoursed on the "Life of a Dry-Plate." He started with the making of gelatine and the properties of bromine, the making of an emulsion, the necessity of bromide being in excess, the advantage of an iodide, and the method of increasing rapidity by adding ammonia and by cooking. The qualities of a good plate were discussed and the advantages of colour-sensitive plates. He then gave a recapitulation of the theories which had been advanced to account for the action of light upon a plate, and followed on with a consideration of the qualities of the numerous developers in use. He strongly advised beginners to leave hydroquinone alone, and to trust to pyro and ammonia. In looking over prints sent to the AMATEUR PHOTOGRAPHER Competitions he had selected 1,200 prints, as showing the faults usually given by the use of hydroquinone, and on reference to the details given by the competitors had found that in over 1,000 instances his judgment was correct. When hydroquinone was used he advocated the abolition of sulphite of soda, and advised the use of ammonia or carbonate of potash with ordinary table salt as the restrainer, when one was necessary, in place of bromide of potassium. He considered that sulphite of soda was used in excessive quantities, even with pyro. If negatives free from stain were required, they could be had by the use of the acid fixing bath. He referred to the theories of development advanced by Messrs. Hurter and Driffield, and mentioned the misunderstanding that had arisen in consequence of these gentlemen using the word density in a sense different from that in which photographers applied it. Having giving a caution on the subject of thorough fixing, Mr. Wall boldly attacked the question of which intensifiers to use according to the nature of the negative and the subject. In the conversation which followed, many other questions were raised, which Mr. Wall fully answered. The competitions of views taken at the last two outings of the season to Higham Park and the Rats' Haunt, Palmer's Green, were held. Mr. A. J. Hewson was declared the winner in the former. The Bynoe printing frame was shown, and price lists of the Hill-Norris dry collodion plate, of new lenses, lists of chemicals from local dealers, etc., for which the Secretary tenders his thanks, were distributed. The next meeting will be held on October 10th, when Colonel J. Gale will address the society on technical points on picture-making, illustrated by the optical lantern. Visitors welcome.

South Manchester.—The first annual meeting of this society was held on 26th ult., Mr. W. I. Chadwick in the chair. Messrs. Holmes, Hunt, and Norris were elected members. The Hon. Secretary then read his report for the past session. The officers have to congratulate the members on the progress made by the society since its formation in February of the present year, the number of members now enrolled being thirty-three. The financial position of the society was very satisfactory, there being a substantial balance to its credit. The report then went on to describe the meetings and the various papers read, amongst them being "Photography by Artificial Light." This was followed by a practical demonstration, "Platinum Printing," by the Hon. Secretary (Mr. W. Thompstone), "Magic Lantern Matters," by the Chairman (Mr. W. I. Chadwick), etc. A good deal of attention had been devoted to stereoscopic work, and some very beautiful transparencies were shown at several of the meetings. Discussions had also arisen from questions asked as regards developing, printing, toning, etc. At the popular meeting held in March, a paper was given on "Holiday Reminiscences, including a Trip to the Isle of Wight," by Mr. W. I. Chadwick, which was very well attended by the members and their friends. The outdoor rambles had been fairly successful, those which have been held being well attended. The Hon. Treasurer's balance-sheet was then presented and passed. The election of officers for the ensuing year followed, and after a short discussion was decided as follows:—Chairman, Mr. W. I. Chadwick; Vice-Chairman, Mr. W. Linnell; Hon. Treasurer, Mr. E. N. Bowden; Hon. Secretary, Mr. W. Thompstone. The meeting then adjourned to the large lecture hall, when the Hon. Secretary gave a short paper on "Picturesque England," illustrated with some eighty slides specially selected for the paper. The places visited included the English Lake District, the Old Abbeys of Yorkshire, the river Thames, Devonshire, Cornwall, Derbyshire, concluding with Shakespear's country. At one part of the lecture some miscellaneous slides of cloud and water effects, snow scenes, etc., were introduced. Frequent applause showed the appreciation of the audience when some well-known or very beautiful view was thrown on the screen.

Warrington.—In lieu of the ordinary monthly meeting, a conversazione and flower banquet was held, on the 27th ult., about 200 members and friends being present. Mr. T. J. Down, the President, in opening the proceedings, said on looking round the room so tastefully decorated with coloured lanterns, fairy and pyramid lights, flowers, and such a profusion of luxurious fruit so temptingly arranged on the tables, all tended to prove the interest those members manifested in bringing about its success, which could only have been the result of much labour. He said the object was to let the people of Warrington know of the existence of the society, which he believed had done and was still doing a good work in promulgating the popular science of photography, which afforded innocent and profitable pleasure and recreation to all those who practised it. He hoped one of the results of the gathering would be an increase in the society's membership. On declaring the banquet open, he gave all a hearty welcome, and invited them to partake of the fruits of their choice, given by various members. There were also three exhibitions of lantern slides of twenty minutes' duration, Mr. H. N. Haughton and Mr. Harding being the lantern manipulators.

SOCIETIES' FIXTURES.

Oct. 6.—LEEDS.—"The Education of an Amateur Photographer," Mr. S. A. Warburton.
" 6.—OXFORD.—Annual Meeting.
" 6.—LONDON AND PROVINCIAL.—"Various Printing Processes," Mr. B. Foulkes Winks.
" 8.—LEYTONSTONE.—Discussion, "The Eastman Paper and Paget Plates," opened by Mr. F. Waites.
" 10.—NORTH MIDDLESEX.—Lantern Slides, and Address, by Colonel J. Gale.
" 10.—LANTERN SOCIETY.—The Slides going to America will be shown.
" 11.—LIVERPOOL (Fairfield). — Practical Demonstration, Chloride Lantern Transparencies, by Mr. G. E. Thompson.
" 11.—BIRMINGHAM. — "Self-Help for Amateurs," by Mr. W. B. Osborne.
" 11.—HACKNEY.—Members' Lantern Night.
" 13.—BIRKENHEAD.—AMATEUR PHOTOGRAPHER 1892 Prize Slides.
" 13.—BARROW (Naturalist). — Lantern Lecture on the Holy Land.
" 13.—LONDON AND PROVINCIAL. — "Practical Demonstration on Retouching," by Mr. Redmond Barrett.
" 15. — LEYTONSTONE. — Lecturette: "Hand-Cameras," by Mr. D. G. Riddick.

Mr. Lyd. Sawyer, of Singleton House, Newcastle, has been awarded the diploma d'honeur at the Paris Exposition Internationale de Photographie, held in the Palais des Beaux Arts, Champ de Mars, from April to September. The exhibition has been on a very elaborate scale, well-known photographers from all over France being very much in evidence. The diploma was the highest award given by the jury, and it says a great deal for the character of Mr. Sawyer's art that he should have been selected for this honour. His pictures were "The Boatbuilder," "The Castle Garth," "In the Twilight," "Waiting for the Boats," "The Smoky Tyne," "The Ha'penny Ferry," "The Last Rehearsal," and "Reflections."

Watkinson and Co., of Leeds, have now moved into a large three-storied building, comprising over 600 square yards, in Merrion Square, North Street, and have laid down new and improved machinery for the manufacture of all kinds of cameras and tripods. They are still keeping their place in Harrison Street, and are having it fitted up as a show room, with dark-room, enlarging, and reducing apparatus for the use of their customers.

The Council of the East London Photographic Society have decided to hold their second annual exhibition in the lecture hall of the New Tabernacle, Old Street, E.C., on Monday and Tuesday, October 24th and 25th. Last day for sending in prints for "open class" competition, October 18th. Messrs. E. J. Wall and A. Horsley Hinton will adjudicate prints on Tuesday, October 25th. Entry forms and full particulars of open class competition may be had from the Hon. Secretary, Mr. M. A. Wilkinson, 28, Shacklewell Lane, Kingsland, N.E., on receipt of stamped addressed envelope.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume.*

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5825. **Local Reduction.**—What is the best way of reducing portions of negatives which are too dense, *e.g.*, distant mountains, etc. ?—SKELOS.

5826. **Enlarging.**—Would any reader inform me if it ie poeeible to enlarge from a qnarter-plate negative with a Lancaster's Instantograph? Any help will greatly oblige.—JOHN PEEL.

5827. **Transferring Albumen Prints.**—Can anyone tell me how to transfer albumen prints to china ? —TIM.

5828. **Lifting Plates.**—Can any kind reader give me directions how to lift plates into a changing bag for hand-camera ?—AMATEUR.

5829. **Writing on Prints.**—Can any amateur inform me of an easy method of writing or putting the name of a view on a print, without spoiling negative ? —J. LESTER.

5830. **Exchanging Prints.**—Does any amateur wish to exchange a few prints? If eo, send address. —J. LESTER, Church Street, Old Basford.

5831. **New Platinotype Process.** — Does any amateur know anything about the *new* Platinotype process, and a good, reliable formula for developing the Imperial plates by hydroquinone ?—J. LESTER.

5832. **Calais and Boulogne.**—Where can views of Calais and Boulogne be obtained ?—F. G. R.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Sept. 30th.—Nos. 5821, 5822, 5823.

ANSWERS.

5808. **Developing Tent.**—Davenport and Co., 32, Parkhouee Street, Camherwell; Fallowfield, 146, Charing Cross Road; and Adame, 81, Aldersgate Street, all have cheap and good developing tents of various kinds.—EDITOR.

5813. **Mounting.**—The beet method of mounting chloride prints, whether matt or glossy, is with waterproof paper and plain starch paste. The query is a little uuintelligihle as it now stands.—EDITOR.

5815. **Herzheim s Paper.**—The address of thie firm ie Gehruder Herzheim, Duren, Rheinland, Germany. The formula we are not quite eure ahout, hut believe it to be :

I.

Water	500	parts.
Sodium hyposulphite	250	,,
Ammonium sulphocyanide	30	,,
Acetate of lead	10	,,

II.

A'um	8	parts.
Citric acid...	8	,,
Nitrate of lead	10	,,
Water	500	,,

When dissolved, mix I. and II. and add

1 per cent. sol. chloride of gold ...	40	parts.

Allow te stand 48 hours before use.—EDITOR.

5816. **Fungus.**—The cause of the fungue is due to organic or nitrogeneus matter of eome kind finding ite way into the solution.—EDITOR.

5817. **Platinum Printing.**—The Platinotype Company's new cold bath paper; address, 29, Southampton Row, Holborn, W.C.—EDITOR.

5824. **Pizzighelli Paper.**—A successful way of damping this paper is to steam the pad of the printing-frame, by means of a kettle; but there are many other waye, such as leaving the paper in the cellar for an hour. I prefer the first method; of course, the negative must be varnished. There is no development, as the process ie a printing-out one; the prints are fixed by being soaked for about five minutes at a time, in a weak solution of hydrochloric acid, one part acid to sixty of water, changing the solution two or three times; the acid is afterwards washed out by a few changes of clean water. The paper prints hest, I think, in a good actinic light.—J. G. P. VEREKER.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

CARELESS.—(1) Professionals either use cardboard fastened on to the front of the printing-frame with a hole cut in the card, or else they use the ordinary commercial vignetting glasses, which may be bought from any dealer. (2) You will find the note you require on toning Solio paper on p. 224.

J. W. TURNER.—Adams and Co., 81, Aldersgate Street, or E. H. Fitch, 34, Angell Road, Brixton, will supply you with matt celluloid sheets; the price we do not know. We could not give you a complete index every week; we do include "contents" now.

H. D.—(1) The faults with this are that the hands and face are too white; the print wants an inch cut off each side, and it is overtoned. (2) The negative wants intensifying, we think, although you have flattened it by printing in the sun. (3) The perspective in this is horrible, the horee's head is as hig as the man; it also wants cloude. (4) Too flat and over-toned, wante clouds. Never print in the sun, do not over-tone, and let us see eome more work soon.

E. E. S. (Nunhead).—We should advise a rapid rectilinear hy Crouch, Taylor, Beck, or Perken, Son, and Rayment.

F. S. J.—(1) This possesses one of the usual characterietics of hydrokinone development. The negative wants inteneifying, otherwise very good. (2) Utterly without interest now; print in some good euitahle cloude, and you might make a picture of it. (3) Flat, and wants cloude; would probahly be improved by intensifying negative. (4) Ditto. (5) Ditto. This is by no means a had little bit. All your prints show careful work, but a little want of art principles, and all are too flat. Try intensifying your negatives, or elee print in a weaker light. Let us see some work again.

O. A. CAYLEY.—Neutralise your gold by adding 30 grains of hicarbonate of soda to it, before adding to the sulphocyanide; there ehould bs no smell from the bath. The red spots are, we believe, due to your not neutralising the gold.

J. RAWLINS.—J. Turnbull, 6, Rose Street, Edinburgh, will eupply you with any number of the film carriers.

E. B. G.—(1) Collotype, Woodbury-gravure, Woodbury type, and photogravure—hut no other ordinary process. Probahly chloride printe toned with platinum are more permanent than albumen prints; that they are absolutely permanent cannot be stated. (2) The carbon proceee gives quite as sharp detail as ordinary silver paper when properly manipulated.

B. C. CREASY.—(1) Good class photographers certainly take apprentices; the premium varies from £25 to £100, according to standing of firm, and whether in or outdoor. (2) Any one may have a copy of "Photographs of the Year" by paying 7s. 6d. before publication. All our queries are answered gratis.

G. ROBINSON.—The simplest tests for water are: (1) Put half pint of the water into a decanter, shake up violently and then smell, when, if there is any offeneive odour, eewer gas is present. (2) In a perfectly clean wine-glass, pour a little water, add two drops of sulphuric acid and enough eolution of permanganate of potash to give it a very faint pink tinge, cover the glass with a plate, and if after fifteen minutes the pink tinge ie vieihle, the water may be ueed. It is always advieable, however, to boil all water, and then filter through a spongy iron or charcoal filter.

J. F. NISBETT.—We know of no one who gives leseons, but you might try Redmond Barrett, 1, Cumberland Street, Eccleston Square, S.W., or A. H. Bool, 93, Harwood Road, S.W.; or A. Underhill, 32, Clarendon Road, W. Croydon.

M. A.—You have run back too far. The article you want appears on p. 283, April 8th, 1892, where you will find a Belge lamp used. Use a eheet of frosted glass, not your eingle lens. Always glad to help you.

R. H. METER.—(1) The streake are due to your not polishing with waxing solution enough. Apply your solution with a flannel, and then polish well with another pad. (2) The black epecke are not of much moment unless they are very numerous. Have you unscrewed the combinations and dueted the inside surfaces. (3) We do not understand this query. What do you want to know, exposure, distances, or what?

H. PARKER.—(1) Very poor, figures utterly out of place, and definition bad. (2) Spoilt hy halation and curious marking on right side of print. (3) Without any interest whatever, and spoilt by halation.

H. JONES.—Your letter was held over till we could aetually test your sample. The salt eent seems to he a mixture of bicarbonate and carhonate; prohably it is the former which has deteriorated. The easiest method of distinguishing between the two is to disеolve eome of the salts in distilled water, and add to some solution of sulphate of magnesia in dietilled water. The carbonate gives a precipitate at once and the hicarhonate only on hoiling.

STUART.—(1) Permits to photograph for six monthe, Sundays excepted, in Hyde Park, St. James'e Park, and Kensington Gardens, may he obtained from H. W. Primrose, H. M. Board of Work, Whitehall, S.W. (2) We are always glad to see visitore; Mondays from 2 to 5 is the regular visiting day, but if you can write, making an appointment, we will see you any day but Tuesday.

H. L. S. R.—Your best plan is to spot out the holes on the negative. Mix eepia carmine and vandyke hrown with a little weak gum water, and use a fine camel'e-hair hrush, and stipple the colour on the holes in little spots.

W. TODD.—We have tried Amidol with good results. You will find notes on the same in our issue of Sept. 2, 1892, p. 162. A letter appears in our correspondence column of thie week which gives a very good hint on its use. We shall be very glad to see prints at any time.

L. S. SMITH.—Do not use ammonia, but add ½ oz. of carbonate or washing soda to hypo bath.

ARINAS.—(1) The percentage of salts varies, but approximately the following are correct. Sulphocyanide of ammonium 50 per cent., nitrite of potassium, 50 per cent., uranium nitrate, 70 per cent., ferric chloride, 90 per cent. (2) Obernetter'e process or Lichtkupferdruck; we are not aware of any detailed description of this process ever having heen puhlished. Briefly the process is as follows:—From a negative a poeitive is made on a film very rich in hromide of eilver, the positive heing developed up rather dense; after fixing and washing, the image is converted into chloride of silver by a mixture of ferric chloride and ohromio acid, well washed and etripped. It is then laid on a copper plate, and is decompossd hy a voltaic current, the chlorine uniting with the copper to a degree varying with the amount of chloride of silver in the image. This is inked and printed from just like a copper plate. (3) Portrait lens. The old Lerebours lens will answer perfectly for enlarging or ordinary portrait work. Get your diaphragm slot cut at a distance from each lens in proportion to the focal length. There is no need to use so small a stop; only to ohtain definition you might open out the aperture of your stops to nearly, if not quite, full aperture of lene.

TRIX.—(1) The admission to P.S.G.B. is 1s. for daytime, and 6d. In evening. Tickets may be had at the Gallery, 5a, Pall Mall, East, or pay at the doors. If you will call upon us when in town, we will take you round. (2) Inserted in query column. We do not think it impossihle.

J. BLACK.—(1) If you will turn to Photographic Procedure, p. 244, of this issue, you will find exactly what you want—a properly graduated negative is obtained. (2) Chrome alum is superior to ordinary alum for hardening and clearing negatives. (3) Starch is to he preferred when mounting as you suggest. (4) Actually so much soda is not required for 2 gr. of gold, hut we have always got finer tones than when a emaller quantity is used; it also ohviates any chance of sulphur toning from the carrying into the toning bath of any organic preservative acid. (5) Prohably intensification would help your flat negatives. We could hardly recommend any particular intensifier without seeing negative and print. Try Monckhoven's silver cyanide intensifier. (6) The chrome alum bath may be used over and over again. (7) Use a rapid plate and preferahly an isochromatic, as large a stop as will give you sufficiently good definition, about ½sec. exposure, and develop with pyro and ammonia, so as to get thin negatives. Always glad to help you; never mind the number of questions, the more the merrier.

H. RIDGE.—The stains look very much like splashes of eome chemical having got on the paper. Write to the makers.

STUDENT.—The fixing bath used for fixing the paper may be used for fixing negatives.

E. BUCK.—We never give our correspondents' or prize-winners' addresses, hut we have sent your letter on to the lady in question, and she will therefore do what she thinks right in the matter.

K.—Thanks for your letter, which puts ue in a far happier state of mind. We think you are a little hard. The text-hook stuff on light is merely the preliminary canter to a series of papere on isochromatic work which we hope to make intereeting and inetructive. With regard to the chemistry, it ie useful to some, and the camera-making has, judging from letters we receive, pleased many. You like our articlee well; we will meet you, and try and put a portion in every week, but then unfortunately we have a lot to do, and it is utterly impossible sometimes to get it written in time for press. Will not our Monthly Supplement eatisfy you? You hardly think of the cost of new illustrations every week, though we do not consider that as a rule. Now we have plenty of old blocks we could use, but would they be of any interest? We have tried to meet you so far. Give us in black and white

what you want in the shape of articles, suggesting past ones as examples, and we will see what can be done. We want to please everybody if we can.

F. H. ASHTON.—You will find in our issue of last week, p. 224, a letter on "A New Use of Solio Paper" which will just tell you what you want to know.

F. PARTRIDGE.—The prints sent into our competition have unfortunately been loaned, and we cannot therefore find yours. Let us see a duplicate.

C. T. PYKE.—By all means use portrait lens and rapid plates for studio work, and R.R. for groups and portraits out of doors.

F. W. WALTER.—The addition of more sulphite certainly affects the density of the plate. You might increase the hydroquinone, and thus get out of your difficulty as to density, but then the solution would keep no better than at first. We have had good results from the following:—

	I.	
Hydroquinone		150 gr.
Sodium sulphite		1 oz.
Sulphurous acid		60 min.
Distilled water to		10 oz.
	II.	
Sodium carbonate		1,300 gr.
Caustic potash		154 ,,
Distilled water to		10 oz.

For use mix in equal parts, and dilute with three times the quantity of water. Try the Imperial or Barnet plates; these have the particular character you want.

Sale and Exchange.

RULES.

CHARGE.—Twelve *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* **2½** *per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of* **3d.** *to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, I, *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.,** *or a commission of* **2½ per cent.,** *upon the sale price of the apparatus.*

Cameras, etc.—Whole-plate landscape camera, never used, cost £7 10s., will take £4 10s., or exchange for hand-camera.—Sewell Brady, Portsmouth Road, Long Ditton, Surrey.

Cameras, Lenses, etc. — Whole-plate camera, Lancaster's Special, in good condition, splendid rectilinear lens, three double dark slides, and leather case, price £8, carriage paid.—No. 337, office of this paper, 1, Creed Lane, E.C.

Fallowfield's half-plate bellows studio camera, rack adjustment, dark slide, and splendid portrait lens, price 70s., lens alone worth double; also quarter-plate ditto, double slide, fine portrait lens, price 40s.; approval.—C. Boardman, 39, Coal Exchange, London.

Hand-Cameras, etc. — Griffith's quarter-plate hand-camera, in perfect condition, selling to get larger size, 38s.—Ajax, 24, Upham Park Road, Chiswick.

Kodak, new, cost 26s., cash 19s; Stirn's Vest camera, 12s. 6d.—B., 24, Bilston Street, Wolverhampton.

Kodak for sale, as new, takes pictures 4 by 3½, price £2 10s.—Address, M. D., 1, Hungerford Villas, Long Ditton, Surrey.

Fallowfield's Facile, cost 5 guineas in July, faultless, splendid R.R. lens, sunk findor, rotating stops, two shutters, £4, bargain.—Pearsall, Enville Street School, Stourbridge.

Lantern, etc.—Russia iron lantern, three wicks, brass fronts, with sliding carrier, nearly new, cost £4, for £2 10s.—H. Bell, Edwalton House, nr. Nottingham.

Lenses, etc.—Rapid rectilinears! French make, special value, 5 by 4, 5⅜ in. focus, 11s. 6d.; 7 by 5, 7½ in. focus, 14s.; 9 by 7, 11 in. focus, 20s., complete with hood, flange, cap, and set of Waterhouse stops, largest aperture *f*/8; three days trial allowed.—Dorey, Lester and Co., Kilburn, London.

Ross's 10 by 8 view lens, cost £7 10s., cash £4.—Cortes, 71, Ludgate Hill, E.C.

1891 Instantograph half-plate lens and shutter, with mahogany mount, a very good lens, in excellent condition, 17s.—MacIvor, Shotley Bridge, Durham.

Oxygen Cylinder.—Oxygen cylinder, 40 ft., price 30s.—No. 343, office of this paper, 1, Creed Lane, E.C.

Sets.—7½ by 5 Watson's Premier camera, with turntable, four double backs, tripod stand, two bags, Ross' 8 in. P.S. lens, Thornton-Pickard shutter, etc., camera and lens mounted in aluminium, £24; new this spring.—Francke, St. Saviour's Road, Jersey.

Bargain! Studio camera, cabinet size, with legs, dark slide, printing frames, dishes, etc., lot £5 10s.; approval on deposit.—H. D. B., Albion Works, Salford, Manchester.

Half-plate camera by Morley, three double dark slides, tripod and case, Hockin lens, splendid condition, £5 10s.—No. 336, office of this paper, 1, Creed Lane, E.C.

Half-plate leather bellows camera, all movements, two dark slides, lens, stand, and case, in splendid condition, cost £7, take £4; also Jeffries' perfect washer for prints and plates, cost 16s., take 10s.—No. 344, office of this paper, 1, Creed Lane, E.C.

Shutter.—Place's blind shutter, nearly new, cost 8s. What offers?—Pratt, County School, Dereham, Norfolk.

WANTED.

Cameras, etc.—Wanted, whole-plate camera, complete, Shew's preferred; exchange grand St. Bernard puppy.—F., care of Mr. Mathews, 156, Loveridge Road, Kilburn, N.W.

Wanted, 10 by 8 or 12 by 10 camera, no lens, cheap.—G. M. Forrest, Brechin, N.B.

Hand-Cameras, etc. — Hand-camera wanted. Lowest terms to Sewell Brady, Long Ditton, Surrey.

Lantern Slides.—Wanted, lantern slides, sets or any of general interest, cheap and good, no rubbish.—Mitchell, Northgate, Blackburn.

Sets.—Wanted, good half-plate camera, long extension, all movements, with arrangements for taking stereoscopic views, three double slides; also 5 by 4 camera, lens, three double slides, stand, and case, price 40s.—Address, Miss Morris, Elm Villa, Mannamead, Plymouth.

Wanted, 12 by 10 camera, three slides, brass fixings, strong tripod, inner frames for all sizes down to half-plates, Ross' No. 3 cabinet portrait lens, and Ross' 18 in. portable symmetrical lens.—Address, terms, X., 7, Batoum Gardens, West Kensington.

Studio Accessories.—Studio accessories and posing chairs, good condition, cheap. — Pyke, Rainham, Kent.

Bargains in Lenses. — Dallmeyer portrait lens, c.d.v., grand definition, Waterhouse stops, finest order, 63s.; Swift portable symmetrical, No. 3, as new, rotating stops, 35s.; Fallowfield's portrait lens, rack focussing, Waterhouse stops, 21s.; Ross' No. 2, c. d. v., portrait lens, Waterhouse stops, rack and pinion, take £4 5s.; 7 by 5 Optimus rapid rectilinear, Waterhouse stops, as new, 42s.; Ross' half-plate rapid symmetrical, Waterhouse stops, as new, 75s.; Wray's 5 by 4 rapid rectilinear, Waterhouse stops, as new, 37s. 6d; 15 by 12 rapid rectigraph lens, Silver Ring, iris stops, grand definition, take £5 12s. 6d., quite new; whole-plate Optimus rapid landscape lens, rotating stops, quite new, take 35s.; whole-plate Lancaster wide-angle lens, rotating stops, best order, 15s.; half-plate Optimus, 7 by 5 rapid rectilinear, Waterhouse stops, fine definition, 42s.; half-plate Desideratum landscape lens by Hockins, 10s. 6d.; Wray's landscape, Casket lenses, 5 in., 7½ in., and 10 in. focus, Iris stops, quite new, take 70s.; Ross c. d. v. portrait lens, rack and pinion, finest condition, 35s.; Shew's c. d. v. portrait lens, Waterhouse stops, rack and pinion, as new, take 21s.; quarter-plate Optimus rapid rectilinear, by Perken, Son, and Rayment, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.— On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Bargains in Hand Cameras. — Hand-Cameras by Collins, quarter-plate, covered in morocco, fitted 5 by 4 Wray lens, iris stops, Thornton-Pickard time and instantaneous shutter finder, direct focusser, patent changing box for 12 plates, Eastman's roll holder, and 6 double slides, quite new, £8 17s. 6d., cost double; Rouch Eureka quarter-plate, rapid rectilinear lens, blind shutter, 12 plates, in case, £3 17s. 6d.; Lancaster's quarter-plate, omnigraph, as new, carries 6 plates, good lens, 16s. 6d.; Rouch's Eureka, size 5 by 4, rapid rectilinear lens, carries 12 ¼-plates, finder, bag changing and case, as new, take £4 17s. 6d.; Ordinary Kodak, quite new, 24 films, 25s. 6d.; Samuel's hand-camera, 9 by 12 centimetre, rectilinear lens, time and instantaneous shutter in case, quite new, take 32s. 6d.; Book Camera, London Stereoscopic Co., size, quarter-plate, Optimus rapid rectilinear lens, time and instantaneous, three double slides, in solid leather case, quite new, take £2 12s. 6d., cost £7 7s; Luzo's hand-camera, Robinson, Regent Street, quarter-plate R.R. lens, instantaneous shutter, carries 100 films, solid leather case, quite new, £4 17s. 6d.; Kodak, No. 4, size 5 by 4, new spool of films, warranted finest condition, in leather case, take £7 17s. 6d., cost £11 7s. 6d.; Adams' Ideal hand-camera, twelve quarter-plates, finest rapid rectilinear lens, time and instantaneous shutter, as new, £5 15s.; Fallowfield's Facile, fitted rapid rectilinear lens, carries twelve quarter-plates, as new, £3 17s. 6d. Optimus magazine hand-camera, covered leather, carries 12 quarter-plates, finest Optimus rapid rectilinear lens, two finders, shuttor, etc., as new, take £5 5s.; Talmer hand-camera, carries 12 plates, fine lens, two large finders, time and instantaneous shutters, as new, take 65s.; Griffiths' best quality hand-camera, carries six ¼-plates, two sunk finders, good lens, pneumatic shutter, take 30s., cost 42s.; quite new, all above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Cameras and Sets.—Lancaster's quarter-plate 1889 instantograph, finest order, all latest improvements, including camera, lens, iris stops, two double slides, stand and case, 37s. 6d.; Lancaster's 1889 instantograph, best order, all improvements, half-plate lens, iris stops, shutters, two slides, folding stand and case, 65s.; half-plate camera, reversing back, and rapid rectilinear lens, works *f*/8., both by Dollond, Ludgate Hill, double slide and folding stand, as new, take £4 4s.; 12 by 10 camera, finest mahogany, double extension, leather bellows, wide-angle movement, rising and falling front, etc, double dark slide, as new, £5 5.; 5 by 4 best quality camera, by Robinson, Regent Street, leather bellows, rising, falling, and cross front, wide-angle movement, three double slides, fine rapid rectilinear lens, by Robinson; Newman's shutter and Eastman's ¼-plate roll holder, quite new, £5 17s. 6d.; Optimus whole-plate camera, leather bellows, reversing back, etc., Optimus 9 by 7 rapid rectilinear lens, Waterhouse stops, Thornton-Pickard shutter, three double dark slides, three-fold stand and case, £11 5s.; whole-plate; 7½ by 5 long-focus camera, by Gotz, wide-angle movement, leather bellows, reversing back, rapid rectilinear lens, and folding stand, set complete, £5 15s.; half plate Underwood's Instanto wide-angle movement, double extension, fitted rapid rectilinear lens, slide, and folding stand, £3 17s. 6d.; half-plate camera, by Houghton, all latest movements, grand article, fitted three double slides, rapid rectilinear lens, and double folding stand, £6 10s.; quarter-plate Lancaster's Merveilleux set complete, 15s.; quarter-plate aluminium Instantograph set complete, quite new, camera, lens, slide, shutter, and stand, 50s.; quarter-plate Instantograph camera, lens, shutter, slides, and folding stand, 32s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Cameras! Cameras! Cameras! Lenses! Lenses! Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus of every description bought, sold, or taken in exchange. Inspection invited.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

STATON AND COOPER, 15, Cheapside, Derby, who are giving up Lantern and Slide Business, offer their Stock of Lanterns (including a "Bridgman" Triple by Steward), Slides, Steel Cylinders, etc., also a Small Stock of Photographic Apparatus, Mounts, Plates, etc., at greatly reduced prices to clear. Send for list.

AMATEURS' Negatives Retouched.—W. Shepherd, 142, Tweedale Street, Rochdale.

ENLARGING APPARATUS. — Hume's enlarging apparatus, 5 in. condenser, without objective, 61s. 6d.; with 8 in. condensor, 122s. 6d., carriage paid. —Hume, 1, West College Street, Edinburgh.

IMPORTANT TO AMATEURS.—Negatives skilfully Retouched. Printed in silver, gelatino-chloride, etc., and Enlarged. Also Developing, Copying, etc.—Terms strictly moderate.—Addrsss, Wilfrsd Emery, 24, South Street, Baker Street, W.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 419. Vol. XVI.] FRIDAY, OCTOBER 14, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up t nature."—*Shakespeare.*

Our Views.—Jupiter's Fifth Satellite—Photography to be the Judge—Manchester Am. Phot. Soc. and the "A. P." Slides—The "A.P." Slides at Pall Mall—Itinerary of the "A.P." Slides—Messrs. Elliott's Picture—A Photographic Diary—Its Possibilities—The Camera Club Exhibition—The E. London Exhibition—Photographs of the Year—Tunbridge Wells Society Exhibition—The P.S.G.B. Show—Photography at the Chicago Exhibition—The Fee Charged—Reproduction of Old Books and MSS.—Luther's Catechism—Colour-sensitive Plates—Copying Coloured Objects—New South Wales and English Apparatus—Photographing the Insane—Dr. Wernhold and the Insane.

Chit-Chat, by Chatterbox.

Letters.—The "A. P." Lantern Slide Competition (Puzzled)—The New Toning Bath (Isis)—The Chicago Exhibition (Harvey)—Transparent Markings (Edward's, C. of A.)—A Warning (Wood)—Medals at Pall Mall (Spectator)—Cresco-Fylma (H. F.)—Stripping Gelatino-chloride Bromide Prints (Forret)—The Expansion of Ammonia (Cadett)—A Correction (H. J.)—Lantern Slides (W. H. Holt).

Articles.—Photographic Procedure (Wall)—General and Photographic Chemistry (Conrad)—American Work and Workers (Barnes)—Glycin—Photography in Meteorology.

Holiday Resorts.—County Down.

Apparatus.—England's Film Carriers—The "Lothian" Optical Lantern—The B. W. and Co.'s Photographic "Tabloids"—Maxotints—Swift's Lantern Lenses—Vitreographine.

Catalogues.—Lechner—Weeks—G. W. Wilson and Co.

Exhibitions.—Pall Mall—Southsea.

Societies' Meetings.—Accrington—Belfast Y.M.C.A.—Birmingham—Bolton—Brixton and Clapham—Chorley Polytechnic—Croydon—Eastbourne—Gt. Yarmouth—Hackney—Holborn Camera Club—Kensington and Bayswater—Lewes—Lewisham—Liverpool Y.M.C.A.—Midland—N. London—Oxford—Putney—Rotherham—Sheffield—S. London—Sydenham—W. Surrey—W. Kent—Wolverhampton.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months,	5s. 6d.	 Twelve Months,		10s. 10d.
Postal Union	,, ,,	6s. 6d.	 ,, ,,		13s. 0d.
Out of Postal Union ..	,, ,,	7s. 9d.	 ,, ,,		15s. 8d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

mateur Photographer" Monthly Competition, No. 41.—"Inland Scenery with and without Figures." Latest day, Oct. 24th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, November 11th.)

Possibly many of our readers, with a tendency for astronomical studies or an inkling of this science, have noticed the alleged discovery of a fifth satellite to Jupiter by Professor Barnard on September 9th, at the Lick Observatory. Jupiter, as is well known, had already four attendant satellites, and now the discovery of this fifth moon is causing no little stir in the astronomical world. That the actual existence of the new moon, which appears to be only 100 miles in diameter and of the thirteenth magnitude, should be doubted is, of course, only natural.

The question is who is to decide for or against, and what are to be the means to be taken to convince everybody? Photography, it is suggested, is the best judge, and it is said that if the part of the sky in which Jupiter and its new moon happened to be at the time of the alleged discovery be photographed, and the resulting negatives examined to see whether there is a thirteenth magnitude star there, and if so—well, the deduction would be somebody had blundered.

We are quite sure all our readers will congratulate the Manchester Amateur Photographic Society on the fact that all the awards in Class III., Architecture, of our Lantern-slide Competition go to members of that society. This speaks well, we think, for the high standard of work attained by this society.

We had the pleasure of showing the Prize Slides at Pall Mall on Saturday last. And our competitors will be glad to hear that the attendance was greater than at any previous lantern-night, and the high quality of the slides was commented upon by all.

The following is the list of places and dates for which our 1892 Slides are booked. We have, we are glad to say, been able to reduce the bulk of the box carrying the same to 11 by 10 by 13 inches, and the weight is about one-half of the clumsy, unwieldy case of last year:—

1892.		Nov.	9	Kendal
Oct.	13 Birkenhead	,,	14	Ulster
,,	14 Shrewsbury	,,	15	Belfast
,,	18 Birmingham	,,	18	Preston
,,	21 Burton-on-Trent	,,	22	Rodley
,,	24 Delph	,,	24	Louth
,,	27 Liverpool	,,	28	King's Lynn
,,	29 Douglas, Isle of Man	,,	29	Peterborough.
Nov.	3 Barrow	,,	30	Yarmouth

Dec.	3 Hull	Feb.	10 Carlisle
,,	6 Wolverhampton	,,	11 Haltwhistle
,,	8 Wigan	,,	14 Sunderland
,,	9 Warrington	,,	18 Bootham
,,	13 Manchester	,,	20 York
,,	16 Lewisham	,,	22 Stockport
,,	17 Blackheath	,,	23 Oldham
,,	20 Faversham	,,	27 Sheffield
,,	22 Hastings	Mar.	1 Crewe
,,	23 Maidstone	,,	3 Walton
,,	27 Guildford	,,	6 Accrington
,,	29 Sutton	,,	7 Keighley
,,	31 Polytechnic, London, W.	,,	8 Wakefield
Jan.	2 Richmond	,,	9 Huddersfield
,,	6 Blackburn	,,	14 Hove
,,	10 Phot. Soc., Ireland	,,	15 Eastbourne
,,	13 Munster	,,	18 Leytonstone
,,	19 Gloucestershire	,,	21 Sydenham
,,	20 Hereford	,,	22 Woolwich
,,	23 Devonport (Cam. Club)	,,	24 Brixton
,,	24 Plymouth (Graphic)	,,	28 East London
,,	25 Devonport (R. N. Col.)	April	3 North Surrey
,,	30 Todmorden	,,	5 Ramsgate
Feb.	2 Stockton	,,	8 Cirencester
,,	4 Whitby	,,	10 Cheltenham
,,	7 Newcastle	,,	21 Glasgow
,,	8 Durham	,,	28 West London

With regard to Messrs. Elliott and Son's picture at Pall Mall, and their letter of last week, in which they take exception to our remarks, we must say that in reading over the notice of the same, we fail to see any imputation of an "attempt at misleading the public." Certainly no one can do less than admire the commercial enterprise which led to the production of this enormous picture, and with regard to its colour, that, of course, is merely a question of personal taste. Our contention is that owing to its immense proportion the harmony of the principal wall of the gallery is upset, and that the pictures in the neighbourhood suffer in consequence. This is not Messrs. Elliott and Son's fault, but that of the Hanging Committee. The picture has undoubtedly attracted an enormous amount of attention, and it would, we still venture to think, have shown up far better on an easel or screen by itself. It certainly was not our intention for one moment to impute any dishonesty to Messrs. Elliott and Son.

Of the many uses to which photography has been put, probably that of using it as a means of forming an illustrated diary is the most novel. It is said that a certain millionaire is always accompanied by a quiet-looking man who carries a small square case, and hovers around in a seemingly suspicious way. But he is a most important individual, and receives a handsome salary for his services. It is his duty to take a series of instantaneous photographs, showing how his employer has passed the day. There is no posing or anything of the sort, and the photographer has to use his own judgment in choosing which moments to represent.

We need hardly point out what possibilities this opens up, and really a most interesting and instructive history of a man's life could thus be formed. It is true not all of us can afford to employ a photographer to take us about a dozen times a day, but if we ourselves carried always a hand-camera and shot off at things and places of interest which we came across in every-day life, we could make an interesting record which in years to come would be of value if only to remind us more vividly of the past.

As we announced a few weeks back, the winter session of the Camera Club will be opened on Monday, October 17th, with a smoking concert and a private view of an invitation exhibition of pictorial photographs selected from contributions made by the leading artist photographers at home and abroad. The exhibition will be opened free to visitors from 10 a.m. to 12 a.m., and 2 p.m. to 4 p.m. daily, till December 8th, on presentation of cards, which may be obtained from exhibitors, members, or the Hon. Secretary. The exhibition will consist of selected pictures produced during the past year.

The Hon. Sec. of the East London Society requests us to remind our readers that the 18th inst. is the latest date for receiving entries. Full particulars may be had from M. A. Wilkinson, 288, Shacklewell Lane, Kingsland, N.E.

The arrangements for our portfolio "Photographs of the Year" are now complete and the reproductions well on the road to completion, and we hope to be able to announce the date of publication very shortly. The pictures finally selected are :—

"Quiet Life," by Karl Greger.
"The Silver Strand," by B. Gay Wilkinson.
"Flatford Bridge," by Col. J. Gale.
"Foot Bridge," by F. P. Cembrano.
"A Portrait," by F. Muller.
"How's That?" by R. H. Lord.
"In the Pool," by L. C. Bennett.
"Worn Out," by J. E. Austin.
"The Love Letter," by A. Burchett.
"Portinscale Bridge," by T. M. Brownrigg.
"A Sluggish River," by G. Lamley.
"A Woodland Pasture," by J. Kidson Taylor.

Photographic societies are waking up to serious work now, and each week brings us notice of exhibitions all over the country. Unfortunately, many will take place just about the same time, when if there are open classes it makes it difficult for would-be exhibitors to send to all. The Tunbridge Wells Am. Phot. Soc. will hold their sixth annual exhibition on November 23rd, 24th and 25th. Entry forms, etc., may be obtained from Mr. Jos. Chamberlain, 14, Calverley Park Gardens, Tunbridge Wells.

We are informed that the P. S. G. B. Exhibition has been again well patronised this week ; 1,610 visitors passed the turnstile, making a total of 3,264 since the Exhibition, opened to the public. The lantern evenings especially seem very popular, the average attendance being from 80 to 90 per cent. more than last year.

We publish a letter in our correspondence columns on photographing at the Chicago Exhibition, but at the moment of going to press we hear that hand-cameras will be admitted to the grounds provided a licence has first been obtained, for which a charge of two dollars per day will be charged.

This permission it is said has been caused by the pressure which has been brought to bear upon the Chicago Executive. But surely unless they expect every photographer, both amateur and professional, to be a millionaire, they might just as well have not given permission at all. Some of us probably will not feel inclined to pay about 8s. per day for taking a few snapshots.

Photography and photo-mechanical processes find numerous applications, and one of the finest and certainly one extremely interesting application is the reproduction of old manuscripts and books. To such perfection has this been brought now, that really one has almost to hesitate on giving an opinion as to the original or copy.

An extremely striking example of the fidelity of reproduction is that sent us by A. Brothers, of Manchester, which is Luther's Catechism for the people, pastor, and preacher, with Holbein's illustrations. Our detailed notice of this is unfortunately crowded out this issue.

Now that colour-sensitive or orthochromatic plates can be prepared and obtained commercially, which are practically sensitive to all colours, a very large field of work in this direction has been opened up. It is well known that old books and old manuscripts are sometimes so yellow by age as to present enormous difficulty in photographing the same. The colour-sensitive plate gets rid of this difficulty.

THE application of colour-sensitive plates too for copying objects containing numerous colours is slowly extending, but we were much astonished to find that a photographer employed to copy a very fine and old Persian carpet had used an ordinary plate. A print from a negative was shown us side by side with the carpet, and at our suggestion another negative was taken on a colour-sensitive plate with a deep yellow screen. The result was so different that even the professional photographer was astonished. In such work as this there is a very wide field for amateurs during the winter months, because artificial light may be used with almost better results.

WE are so accustomed to see "Made in Germany" on everything, and to hear that the Germans are beating us everywhere, that it really is refreshing to find that in New South Wales, according to the German Consul's official report, that although chemicals, albumenised paper, and cardboard of German origin are principally used, all other articles are obtained from England, and English dry-plates stand in special high favour both as regards quality and price. English photographic apparatus is also preferred on account of its neat and practical get up, whereas the German apparatus used there is not of the right size to take the English dry-plates. They are also much dearer than the English article.

OCCASIONALLY, it is said, difficulties occur in identifying persons committed to public asylums should death take place whilst the patients are incarcerated. To obviate this the London County Council through its Asylums Committee have now given directions that each patient should be photographed on arrival. This, of course, means yet another chance for the professional, and at Colney Hatch a studio is being built, and an official photographer has been appointed.

Not content with taking the portraits of patients on entering, cured patients will also be photographed on leaving. And we have thus another possible chance for scientific research. What will be the difference between the two portraits of a person at one time sane and at another insane? And will this teach us anything on the subject? This subject has already been taken up, we believe, by Dr. Wernhold, of Vienna, and in Eder's "Jahrbuch" for 1891 he gives the results of his work in this direction.

Chit-Chat.

IT must be both gratifying and reassuring to the Council of the P.S.G.B. to note that the entire photographic press, and, with one exception, the general press, is unanimous in praising the Exhibition as a whole, and in condemning the action of the few malcontents who have done their petty best, or worst, to make it a failure,

THE *Times* critique has, naturally, excited a great deal of not unreasonable indignation against its writer, the identity of whom, in the absence of any denial, your readers may fairly assume stands revealed in the person of Mr. Maskell. If this be so, I cannot help expressing my surprise that the duty of criticising the photographs should have been entrusted to one of a small section which for some time past has been doing its best to thwart the endeavours of the executive to make the exhibition a success.

To my mind, however, the most contemptible feature in the article in question is the attempt which is made in it, by a mis-statement of facts, to attribute the alleged split in the Society to "a difference of opinion which has manifested itself between the pictorial and the scientific schools of photography." That such difference of opinion may exist is doubtless true, but Mr. Maskell's grievance against the Society, as everybody in photographic circles well knows, is a purely personal one, and dates from a certain episode which occurred during the hanging of the pictures last year. Whether the article in question be an emanation from Mr. Maskell's pen or not, it certainly exceeds the limits of honest criticism, and instead of being a fair review of the merits or demerits of the pictures, is simply an offensive diatribe on the internal management of the Society.

WITH two notable exceptions, the awards do not appear to me to admit of hostile criticism. I cannot, however, discover anything, in the very conventional Swiss views of Mrs. Main, beyond good technical work, to justify their being awarded a medal. Nor can I understand why Mr. Dresser's very mediocre work should have been alike distinguished, when one of the finest landscape studies ever executed by photographic means—"Limestone Rocks in Derbyshire," by Mr. Tolley—has been passed by without recognition.

I THINK I like Mr. Gale's landscape even better than his genre work—higher praise I cannot bestow. Mr. Greger's pictures, notably the Welsh ones, are charming, yet several of them he has found in a district which is, perhaps, more photographed than any other. This is evidence of rare skill in avoiding a topographical rendering of the subject. Mr. J. E. Austin's "Worn Out," and "To Account Rendered," from both an artistic and technical point of view, show the possibilities of simple methods in capable hands.

I AM wont to flatter myself that my photographic library is a fairly complete one, but I confess that "Wall's Dictionary of Chemistry," which a contemporary informs us Mr. Haddon referred to at the last meeting of the London and Provincial, does not find a place upon the shelves. Has the Editor of that paper a copy to lend me, or is it possible that "Watts' Dictionary of Chemistry" is the work to which reference was made?

MR. TURNBULL has been good enough to forward me one of his film slides, and I think, as he says, that it fulfils all the conditions which I laid down, except, perhaps, in the matter of weight. This, however, might be greatly reduced by substituting for the metal division, one of stout card or sheet vulcanite.

CHATTERBOX.

The Birmingham Photographic Society will hold their annual exhibition and prize competition in the spring of 1893. There are no less than twenty-four classes. The competition is devoted entirely to members' work.

Letters to the Editor.

THE "A. P." LANTERN-SLIDE COMPETITION.

SIR,—As a competitor in your recent Lantern-slide Competition—and I feel I am writing also on behalf of other competitors, therefore I hope you will publish this letter—I wish to be enlightened on the following point, one of vast interest to competitors in your competition:—Mr. J. E. Austin has taken the highest awards you can possibly award him in *all* your competitions (I *may* be wrong, but I don't think so), therefore he is palpably disqualified from all your present and future competitions, as per your rules. This same remark applies to two or three other successful ones, whom I will not name. It is decidedly unfair for anyone to enter year after year, as some do, being always sure of a medal. This is the opinion of many of my friends.

I shall think twice in future before entering your Slide Competitions, if the awards are to fall into the same hands year after year, especially as, in my opinion, three or four should certainly be *disqualified*. Your idea is a good one regarding number of slides. Ten *is* a terribly hard test, and six is ample, I think.

What explanation can you give to above letter? Some is required, I take it, and I am not alone in holding this opinion.—Yours truly, PUZZLED.

[With regard to this matter, we can only state that there seems to be no regulation as to past prize-winners being debarred from again carrying off the medals, and whilst this is a matter of regret to us now, for we quite recognise the fact that it may be discouraging to younger workers, we shall provide for such a contingency occurring in the future.—ED.]

* * * *

THE NEW TONING BATH.

SIR,—I have given this bath a trial, and find it entirely successful. There is no uneven toning, and the colour is good. The printing need not be much beyond the desired depth, as it does not lose much in fixing. It should, however, be carried so far that you would consider the print too dark if it were mounted in its then state. Toning is rapid and similar to other sulphocyanide baths in appearance. The absence of necessity for washing is a great boon and makes it the simplest process imaginable. A good red-blue is obtained by stopping the toning in about three or four minutes. I have had a bath going for some days, and it is still quite clear and effective. My thanks are due to Mr. Mason for a process I shall certainly not abandon.—Yours, etc., ISIS.

* * *

THE CHICAGO EXHIBITION.

SIR,—For the benefit of those who intend visiting the Chicago Exhibition I append an extract from a letter just received from my uncle, who is on the Exhibition executive:—"We have passed a measure whereby photography is strictly prohibited, both in exhibition and grounds. All offenders will be dealt with accordingly." I am, yours, etc., GRAHAM HARVEY (Lieutenant).

* * *

TRANSPARENT MARKINGS ON GELATINE PLATES PRODUCED DURING WASHING.

SIR,—Replying to your esteemed favour on the 4th inst., the cause of the markings on the negative you send for our inspection is primarily the use of an unsuitable doveloper. It evidently contained far too much alkali, and has so destroyed the gelatine in the film that the film itself has been partially washed away in places by the running water. It might be avoided by washing for a shorter time, but the moral is plainly to use a developer suited to the plate. It is perhaps rather a pity in the interest of the users of dry plates generally that it so soldom seems to occur to them that as it is of vital importance to the makers of plates that the users should get the best possible results from them, therefore the makers would be naturally sure to issue with their plates the formula best adapted for their particular make of plate.—Yours, etc., B. J. EDWARDS AND CO.

* * * *

SIR,—Referring to my letter under the above heading which appears in your issue of the 7th inst., I had before that date made some further experiments with the zinc washing tank which I think show that the metal is the cause of the markings in the negatives. I thoroughly rinsed the vessel and dried it. I found it covered, and in some places thickly, with a whitish substance (which I presume to be oxide of zinc), and this was not removable except by scraping. I then filled the tank with water, and let it rest a few hours, when I noticed there were floating on the surface of the water large numbers of minute bright metallic particles. I emptied the tank, refilled it, and again let it rest; this was several times repeated, and each time the same metallic spots were visible. I then filled the tank with dilute sulphuric acid, and left it for an hour, when the surface of the solution was covered with a thick layer of dirty-looking froth. I poured away the contents and gave the tank a good swilling under the water tap. Shortly afterwards I placed some negatives in it, and set it working as usual for three hours, when all the negatives were removed and dried in a satisfactory condition. I used the tank for two days with good results, but on the third day one of the negatives had in a slight degree the markings complained of. There was then some slight reappearance of the oxide, and I noticed the metallic spots on the surface of the water—part of the apparatus which I did not use after immersion in the acid was covered in a few hours with oxide. It would therefore seem that this "rust" falling on the gelatine must be the cause of the trouble, the oxidisation taking place more rapidly in warm weather—moisture accelerating the action, and exposure to the air when the tank was not in use helping the process. The remedy is to keep the zinc out of contact with the air by means of some thick varnish, or else use a glazed earthenware vessel instead of metal.

I am obliged by your note at foot of my letter, but with regard to the "one error" of using the alum bath after fixing, I adopted that plan after some consideration. Like others, I for some time used pyro, and treated the negatives so developed with the alum bath before fixing. I, however, found the single bottle developer I mentioned—which consists (as is said) of a concentrated solution of hydroquinone and eosine—far more convenient. I continued to treat the plates as I had done when using pyro, but many negatives, when taken from the washing tank, had on them at the edges and sometimes in the centre, a white froth leaving a sediment which I could not remove, for it was in the substance of the gelatine. I then thought that perhaps hydroquinone required different treatment to pyro, and so, not without misgivings, I fixed the image before using the alum bath and I have never since been troubled with that white sediment. Another advantage was that after fixing, the negative could be removed from the dark-room for the final operations.

I understand that the use of the alum bath is to harden the negative and remove any stains caused by the developer. I have not had stains to remove, and the gelatine is as horny as need be.

I had not read the directions for using this developer till after my alterations in the process, and I then found that the prescribed method of development was exactly that which I had adopted. I enclose the directions which accompanied the developer.

This "one error" led me to-day to look up the formulæ for development sent out by some of the leading plate manufacturers. Of these I enclose four—all say alum after fixing, and one gives special warning *not* to use with hydroquinone the alum bath *till after fixing*. The results I have obtained incline me to persevere on these lines.—Yours, etc., C. OF A.

October 8, 1892.

* * * *

A WARNING.

SIR,—Our unfortunate friend Mr. T. B. Walshe has had a terrible experience, but a little caution would have saved him a lot of suffering. If he had placed about a salt-spoonful of the mixture on a shovel and placed it on the fire, he would have been warned of its true character. This should *always* be done with a fresh batch of oxygen mixture. Again, it is not necessary to use black oxide of manganese for its catalytic action, as fine sand does just as well, and the risk of having black antimony supplied for black oxide of manganese is avoided. This same mistake has been made before with fatal results, and if my memory serves me it happened in Ireland. JAMES WOOD.

* * * *

MEDALS AT PALL MALL.

SIR,—Surely it should be open to any one to critise either the awards or management of an exhibition without receiving such a torrent of sarcasm and abuse as your correspondents "F. J. Tollie" and "Not an Exhibitor" seem to consider equivalent

to argument; it would have been more to the point had they endeavoured to refute the statements that I put forward. I must ask Mr. Tollie, too, not to misquote; I said nothing about "*at least forty better pictures*, etc."

It is satisfactory to find that I am supported by the photographic press in taking exception to some of the awards. You, Sir, say of one exhibit that it is difficult to understand why it has received a medal, and your criticism of another medalled picture has called forth the wrath of the exhibitors, while your contemporary the *British Journal of Photography* calls attention to the technical defects that mar another exhibit that has been honoured by a medal.

My contention is that medals should be given as they are supposed to be, for *artistic merit alone*, with this important rule, however, that no technically imperfect work should receive an award. Further, that no enlargement should be medalled unless the negative is the work of the exhibitor, as all the pictorial qualities are due to the producer of the negative, who in an award to an enlargement only is ignored. In an enlargement showing a decided advance in its process or method, a medal could be given, but then it would be for technical progress and not as a picture.

In the matter of favouritism, it was alleged last year that this had existed, and if certain men have special favours again this year it is at least noticeable.

I have no wish to prolong this discussion, but your correspondent's remarks as to the "disappointed exhibitor" do not apply to my case, and it is only natural in matters where personal feeling may show itself so discourteously as in this case, that a writer should prefer to take shelter under a nom-de-plume —Yours truly, SPECTATOR.

* * * *

CRESCO-FYLMA.

SIR,—I have for some time used the "Cresco-Fylma," and find it transfer the increased film to a new support safely; but in the first instance I must remark that the image is very much fainter than in the original size. This, of course, you will say may be put to rights by intensification. There is, however, another point, that is the facility with which the film will slip away as you lift the new support to take it out of the water. If you have an irregular-shaped support on which you wish to fix the enlarged film, the difficulty of doing so becomes tenfold greater, and if at last you are successful in lifting it out, you find that it is out of the perpendicular, or not in the place that you wish it to be. After many attempts, I thought of a way that may be of use to others. I placed the intended support resting on disused negatives in an iron dish. In centre of the bottom of dish I make a small hole, and from underneath stop it up with a pointed lucifer. When I wish to remove the support with the film thereon, I pull out the lucifer, and the water drains out very slowly. With a small sable brush I keep the film exactly where I want it; touching very lightly first one *corner* and then another, and so at last do what first seemed to me almost impossible—get my enlarged film exactly in the place I want it, and perfectly upright.—I am, etc., H. F.

* * * *

STRIPPING GELATINO-CHLORIDE PRINTS.

SIR,—From some cause or other your issue of 30th ult. only reached me to-day. Kindly allow me a word to reply to Mr. Craig. Your contributor in his article did not deem the minutest detail unworthy of notice, but now gives us some further details *re* the above, which may enable the operator to use the same glass plate "for ever."

Mr. Craig first tells us how to use the knife so as to avoid marking the glass, and then, conceding the possibility of scratches, tells us how to use the plate although damaged in this way.

Mr. Craig says with ordinary care one piece of glass is sufficient to enamel at least two dozen prints; I say, with his directions it is good for two thousand or more.

Enamelling is not recommended for portraiture, consequently the prints are likely to be of various sizes, and I pictured the operator fixing several prints of assorted sizes on, say, a whole-plate.

Mr. Craig is too good; I am not quite up to the "average amateur," having on hand *not a few* spoiled negatives.—Yours faithfully, J. A. FORRET.

Edinburgh, Oct. 10th, 1892.

THE EXPANSION OF AMMONIA SOLUTION.

SIR,—My attention has been called to Mr. Haddon's criticism of my article on "Ammonia," in *Dry Plates*, the monthly magazine of the firm of Cadett and Neall.

Let me begin by saying that I am quite ready to learn from those who know better than myself, and if Mr. Haddon is right, I can only offer him my best thanks for his correction.

I would, however, first point out the disclaimer in my paper, where I mention that the statements are not original with me. I have simply done what Mr. Haddon himself has done, and quoted from tables by chemists of repute, and accepted their statements as correct, without any personal proof.

I am at disadvantage in taking Mr. Haddon's criticism from the abridged reports of the journals, as I was not at the meeting; he must, therefore, kindly make allowance in what I am going to say, in case I am under any wrong impression.

My authority for the statements in my paper is the late Mr. John Joseph Griffin, F.C.S., in his work, "The Chemistry of the Non-Metallic Elements"—the tenth edition. Of course, the work is rather out of date, but, considering that many of the latest books quote from tables much older, I need not make apology on this score. Mr. Griffin was—and the firm still is—the maker of the ammonio-meter. Thousands of these have been sold, and are in use all over the world. Mr. Griffin gave considerable personal attention to the testing and analysis of ammonia in a large commercial way, and he gives directions in his book for—

Determination of the chemical strength of liquid ammonia.

Determination of the strength of ammonia by the ammoniameter (hydrometer).

Preparation of liquid ammonia of particular degrees of strength for testing and other purposes.

Now, no human being is infallible—I know that personally very well—but I may, I think, be forgiven for taking an authority who perhaps had the greatest experience in the commercial testing of alkalies and acids in the United Kingdom, and I must confess that until I have tested personally Mr. Griffin's tables, or have had further evidence that his statements are wrong, I shall not lightly surrender him as an authority.

Though, until now, I have never doubted Mr. Griffin's statement, "Ammonia has the remarkable property of possessing the same bulk in all its combinations with water," I have always been aware of the great discrepancy between various authorities in specific gravity tables of all kinds, and I have often wondered at it, but doctors will never agree, even in matters one would suppose to be simple facts.

I have not Watts' Dictionary, but I presume that the statement that liquid ammonia of a specific gravity of ·884 containing 36 per cent. of real ammonia, is from Carius.

It must not be forgotten that Carius was at variance with Roscoe and Dittmar on the important question of the amount of absorption of NH_3 at various pressures, and therefore his S. G. tables may be open to question.

Mr. Haddon has very kindly (and I am sure we all thank him) taken the trouble to put the expansion question to practical test, but he left one important part undone; he did not verify or question the S. G. tables in Watts'; neither did I question Griffin's table, so we may shake hands on that point. Let us now turn to the practical side of the matter.

An expansion of 0·37 per cent. (as per the journals) is for all practical purposes a very small matter indeed, and if Mr. Haddon makes his curve on the data of his experiments, he will be close enough to a straight line to satisfy any photographer's faith in the ammonio-meter. The so-called 20 per cent. error in reading strength is purely one of variance in specific gravity tables, and whether right or wrong does not in any way affect the *relative* testing with the ammonio-meter to an appreciable degree. If dilution to the extent carried out by Mr. Haddon only gives 0·37 per cent. expansion, how much less must be the expansion between samples of ammonia high in strength. It becomes mere straining at a gnat. I do not say that Mr. Haddon is wrong, but as he makes the expansion so little, it would be well for him to test the question again under most careful conditions as to temperature. Surely a curve made on the results of his experiments would scarcely agree with the specific gravity tables in Watts. I will, when not so busy, put this matter to practical test. Griffin's specific gravity tables give for specific gravity ·884 a percentage of 31·9 at 62 deg. Fahr., against Watts' 36.

Someone, please say who is right. There surely should be tables up to date. However, from a practical point of view, I do not find sufficient reason from Mr. Haddon's experiments to prevent photographers from testing their ammonia, as recommended in my paper. They will not in any case be more than a small fraction per cent. in error, one that they would hardly notice in measuring.

An article by Mr. Haddon on ammonia would be much appreciated by us all, and not the least by yours faithfully,

JAMES CADETT.

* * * *

A CORRECTION.

SIR,—I have to thank a correspondent (Mr. A. W. Hunt) for calling my attention to an oversight in the hand-camera which I described a week or two since. Instead of the back of exposing frame being solid, it should have a sliding door formed in it in the same way as the other doors are made, so that the lid will draw down through the bottom when focussing with the ground-glass. Otherwise, as A. W. H. says, the image would have to be seen through a solid piece of mahogany. You will oblige me by inserting this explanation.—Yours etc., H. J.

* * * *

LANTERN SLIDES.

SIR,—Doubtless those readers of your paper who make lantern slides will by this have commenced to use their negatives taken during this summer for that purpose, and these I would like to ask for any old or spare slides, which will, in the natural course of events, be replaced by the newer material.

I am in charge of the C. E. Mission amongst 700 or 800 men employed in the construction of a new tunnel here, and wish during the winter evenings to provide entertainments for them. Any slides that your readers can spare will be most welcome. The subjects that I think best for them are—Views of interesting places at home or abroad, or should any have some astronomical lantern slides to illustrate some simple lectures in astronomy, already promised, they would prove most helpful.—I am, yours, etc., W. H. HOLT.

Green Bower, Marsden, Huddersfield.

Photographic Procedure.

BY E. J. WALL.

(*Author of the "Dictionary of Photography."*)

SECTION VI.

DEVELOPERS AND DEVELOPMENT.

(*Continued from page* 245.)

Pyro and Ammonia—Developing Plates Exposed on Subjects with Poor Contrasts.—It often happens that we expose a plate on a subject which is naturally flat or wanting in contrast, and we may desire to increase the same, and whilst this is by no means a difficult matter, personally, for such a subject, I prefer a soda developer; but for those who wish to develop entirely with pyro and ammonia, I give the following suggestions. To increase contrast, increase the pyro and bromide and lessen the ammonia, and a typical developer for this work will be:—

10 per cent. sol	pyro.. ..	40 to 50 minims.
10 „ „ „	bromide ..	40 „ 50 „
10 „ „ „	ammonia ..	20 „ 30 „

to every ounce of developer required; and it is advisable to add the alkali gradually.

Pyro and Ammonia with a Preservative.—Hitherto we have been talking about the use of plain pyro and ammonia, and whilst this will give us particularly harmonious and soft results, many operators, especially ladies, have a very strong objection to it because it stains their fingers. In many cases the quality of a negative is sacrificed to this craze for clean fingers, and whilst I myself do not like to see my fingers like those of the street vendor of fresh-shelled walnuts, I have never found the slightest difficulty of keeping them or getting them clean. When I have a great many plates to develop and wish to use plain pyro, I always keep on the developing sink a dish full of a weak solution of sulphuric acid and water, and immediately after dipping my fingers into the developer, they are placed in the acid and well rinsed under the tap. When only one or two negatives are to be developed, I do not trouble till all work is finished, and then the fingers are cleaned with pumice stone and acid.

However, to return to our subject, the desire of clean fingers and also the convenience of keeping a stock solution of pyro, have led to the use of preservatives in developers.

These may be either an acid, as already noted, or a sulphite, or some compound of sulphurous acid. Mr. B. J. Edwards has suggested (1880) glycerine and alcohol, and a stock solution of pyro prepared in this manner will keep a very long time if well corked. I have some which has been made at least eighteen months, which is now only a faint brown colour. The formula I use, which is merely Mr. Edwards' made up to a 10 per cent. solution, is as follows:—

Pyrogallol (1 oz. bottle)	437½ gr.
Glycerine	10 dram.
Methylated spirit, to	9 oz.

I am not quite certain, but I believe Mr. Edwards has since recommended the addition of citric acid 40 gr. to this formula, and with this addition it will keep even better.

Sulphites were first suggested by Berkeley, and possibly his formula for the so-called sulpho-pyrogallol has never been surpassed. It is:—

Pyrogallol	1 oz.
Sodium sulphite	4 „
Citric acid	15 gr.
Hot distilled water, to	10 oz.

Dissolve the sulphite in 7 oz. of water, add the citric acid, and pour on the freshly-opened pyro, and make the resulting solution measure 10 oz.

A word of caution may not be out of place here as to the sulphite of soda. None but the pure recrystallised should be used, and it should be fresh and not have been exposed to the air.

Messrs. Mawson and Swan were the first to introduce, I believe, the acid salt, metabisulphite of potash, as a preservative, and the particular formula they recommend is:—

Pyrogallol	1 oz. avoirdupois.
Ammonium bromide.. ..	½ „ „
Metabisulphite of potash ..	1 „ „
Distilled water, to make ..	11 „ „

Dissolve the metabisulphite and bromide in some of the water and pour on the pyro.

I may as well note here once for all that this is the only correct way to make up a stock solution of any developing agent, namely, dissolve the preservative in part of the water, pour on the developing substance, and make up to the required quantity.

Within this last year or two we have had a great increase in the use of acid sulphite of soda. This may be obtained on the Continent in the form of a yellow solution, smelling strongly of sulphurous acid.

But whether this particular kind may be had in England I am not aware. Marion and Co. have placed upon the market a solid acid sulphite which they call Theonine, and this has great preservative power. This salt may well replace the old sodium sulphite, and a good formula is—

Pyrogallol	1 oz.
Acid sulphite or Theonine	1 „
Distilled water	to 9 „

Mix as suggested above.

It must be noted that as both the metab sulphite and acid sulphite of soda have a strong acid reaction, rather more alkali is necessary when using the same.

In 1885 Eder recommended the use of ammonium sulphite in preference to the sodium salt, and having made some of this—for I could not obtain it in England—I have found it work very well. The specific formula recommended by Eder is as follows:—

I.

Pyrogallol	10 parts.
Ammonium sulphite	2½ to 3 „
Distilled water	100 „

II.

Ammonium bromide	5 parts.
Ammonia (sp. gr., 0·91)	50 „
Distilled water	150 „

Immediately before use mix 100 parts of water, 4 parts of Solution I., and 4 parts of Solution II. The image appears quickly in this developer, but still there is quite sufficient time to watch the progress of development. If it is desired to protract the duration of development, one need only add 150 instead of 100 parts of water in the above developer. The negatives also are softer in the diluted developer.

If more vigour or greater contrasts are desirable, a few drops of a 10 per cent. solution of bromide of ammonium should be added. The ammonium sulphite developer yields very good brilliant negatives, which reproduce the high lights well, and yet produce full details in the shadows. It imparts to the negatives an agreeable dark faint brown colour, which is more pleasant than the yellow brown of the glycerine or potash developers.

An alum bath, prior to fixing, acts well, but is not really required, but a saturated solution of alum, without any acid, should certainly be used after fixing and washing.

The ammonium sulphite keeps the pyro solution far better than the soda salt, and with most emulsions it keeps the negatives more free from fog. Unfortunately, it cannot be used with potash or soda, since sulphite of soda or potash and carbonate of ammonia are formed, and the ammonium carbonate has a very poor developing power with pyro on gelatino-bromide plates.

Many operators strongly object to the use of pyro and sulphite with ammonia, and certainly there is a great deal to be said on this point. The use of sulphite is said to give weak shadows, or to "cut the shadows," whilst with some plates it certainly has a greater tendency to give green or iridescent fog.

Mr. J. Pattison Gibson, who is so well known for his artistic work, has arranged a series of ten lectures upon the Tyne and Northumberland, with lantern slides from his well-known pictures, though in one he acknowledges the assistance of such well-known workers as Messrs. Auty, Laws, Lee, Parry, and Lyd. Sawyer. Terms and syllabus of each lecture may be had on application to Mr. J. P. Gibson, Hexham.

General and Photographic Chemistry. — X.

By E. C. Conrad, F.C.S.

THE NON-METALLIC ELEMENTS AND THEIR COMPOUNDS.—(*Continued*).

IODINE (I=127).

Oc.: Iodine is not found free in nature but widely distributed in combination with potassium, magnesium, and calcium, in sea water and marine plants and animals. M.: In the northern parts of Scotland, the adjacent island, and in some parts of Ireland, the collection of seaweed is an established industry. The weed is collected and burnt in kilns, or iron retorts, at a low red-heat. Gases composed of various hydrocarbons, ammonia, and aqueous vapour are given off, and charcoal, phosphates, and salts of chlorine, bromine, and iodine remain. The mass is then extracted with water, potassium sulphate and chloride separate out, and the remaining liquid, which contains all the bromides and iodides, is mixed with oil of vitriol (crude sulphuric acid) and transferred to the iodine still, an iron pot set in brickwork and provided with a lid and lead delivery pipe. After the introduction of the liquor the lid is fitted on and some manganese dioxide introduced through a suitable opening, and the fire made up. The iodine distils over and is collected in a number of receivers. When all the iodine has come over, more manganese dioxide is introduced and the bromine is collected in a separate set of receivers. The iodine is partially purified by resublimation, but always contains some chlorine, bromine, and cyanide. The above is an outline of the commercial manufacture of iodine from kelp; to obtain it in the laboratory, a similar method, and one corresponding to those already given for the preparation of chlorine and bromine, is adopted; thus on heating any iodide with manganese dioxide and sulphuric acid, iodine will be given off as a violet-coloured vapour, and can be condensed in a cool receiver. Eq.: $MnO_2 + 2H_2SO_4 + 2KI = K_2SO_4 + MnSO_4 + 2H_2O + I_2$. P.: Iodine is a solid, and occurs crystallised in rhomboid plates of a greyish-black colour having a considerable lustre. Its S. G. is 4·95, and it melts at 107° C. and boils at 175°, but slightly volatilises at all temperatures. Its vapour is the heaviest known, being equal to the atomic weight of the element and therefore eight and a half times heavier than air. Iodine is very slightly soluble in water, but readily dissolves in alcohol, ether, carbon bisulphite and solutions of the alkaline iodides. The solutions of iodine do not bleach, iodine is liberated by chlorine or bromine from its combinations. Iodine is a powerful poison if taken in quantities. U.: Iodine is used in medicine as a tonic, and also to absorb swellings. In solution with potassium iodide it is used in analytical volumetric estimations. U. P.: In the preparation of iodides for emulsions. *Test.*—Iodine forms with starch a characteristic blue colour; the smallest trace of iodine can be detected by this reaction.

Hydriodic Acid, HI=128.—M.: Iodine and hydrogen combine together on heating, but this acid is more conveniently prepared by one of the following methods. (1) On passing a stream of sulphuretted hydrogen gas through water containing finely divided iodine in suspension, a solution of the above acid is obtained. Eq.: $H_2S + I_2 = S_2 + 2HI$. (2) The acid can be obtained in a gaseous form by decomposing phosphorous teriodide with water. Eq.: $PI_3 + 3H_2O = H_3PO_4 + 3HI$. Red phosphorus and iodine, both dry, are introduced into a flask and the mixture gently

heated, when combination at once takes place; the water is carefully introduced drop by drop, and the hydriodic acid gas collected in a cool receiver. P.: It is a colourless gas of an acid reaction, and fumes strongly in the air. It is incombustible. By the application of cold and pressure, it can be condensed to a liquid, or solid. Chlorine or bromine at once decomposes it. This acid is very soluble in water, and its strongest solution has a S. G. of 1·67 and boils at 127° C., fumes in air, and gradually turns brown through separation of iodine. The iodides of silver, mercury, lead, copper, gold, and platinum are insoluble in water. With the exception of the alkaline iodides, most of the salts of this acid are decomposed by heat, forming an oxide of the metal and liberating iodine. The iodides of gold and platinum leave the metal on heating. U.: A solution of hydriodic acid is useful in chemical research. U. P.: To form iodides. *Tests.*—An iodide heated with copper oxide in a bead of microcosmic salt in the inner blowpipe flame colours the other portion of the flame an emerald green colour. (2) Silver nitrate gives with a solution of the acid or a soluble iodide a yellow precipitate insoluble in ammonia solution. (3) Mercuric chloride gives a bright scarlet precipitate. (4) Iodides are decomposed like the chlorides and bromides on heating with manganese dioxide and sulphuric acid, and the liberated iodine can be recognised by its reaction with starch. It will be noticed that silver nitrate gives a white precipitate (AgCl) with a solution of a chloride or hydrochloric acid, soluble in ammonia; with a bromide or hydrobromic acid, a yellowish-white precipitate (AgBr), soluble with difficulty in ammonia; and with an iodide or hydriodic acid, a yellow precipitate (AgI) insoluble in ammonia. In a solution containing all three, the AgI is precipitated first, then the AgBr, and lastly the AgCl; so that by acidulating the mixture with dilute nitric acid and carefully adding silver nitrate, a rough separation can be brought about. Chlorine water and starch solution added to the mixture would at once give a blue colouration in the presence of iodine.

THE OXY-ACIDS AND OXIDES OF IODINE.—There are probably several of these acids with their corresponding oxides, but the only ones that have been satisfactorily isolated are iodic acid HIO_3, periodic acid HIO, and the anhydride of the first, iodine pentoxide I_2O_5.

Iodic Acid, HIO_3.—Oc.: A salt of this acid, sodium iodate, occurs mixed with Chili saltpetre. M.: By passing chlorine through water containing iodine in suspension. Eq: $I_2 + Cl_{10} + 6H_2O = 10HCl + 2HIO_3$. It can also be obtained by the oxidation of iodine produced by the action of strong hot nitric acid. P.: Iodic acid forms transparent six-sided crystals which dissolve readily in water. It forms a series of salts of which the alkaline iodates are only soluble in water; they are all decomposed by heat-forming iodides or oxides. Silver iodate, $AgIO_3$, is a white crystalline compound insoluble in water, but readily in ammonia. U.: This acid is used as a test for morphine, that alkaloid decomposing it with liberation of iodine.

Iodine Pentoxide, I_2O_5.—M.: By heating iodic acid to 170° C. P.: It is a white crystalline substance, which dissolves in water, forming iodic acid, and is decomposed on heat into its elements. This oxide combines with some of the iodates.

Periodic Acid, HIO_4. M.: A salt of this acid is produced by passing chlorine through a solution of an iodate in caustic alkalies. Eq.: $KIO_3 + 2KHO + Cl_2 = 2KCl + H_2O + KIO_4$. P.: The acid is obtained in colourless crystals associated with two molecules of water. On heating to 160°, the corresponding anhydride is said to be formed, *Iodine heptoxide*, I_2O_7; on further heating, the pentoxide and free oxygen is formed. Many of the periodates have complicated formations; thus there are three silver salts known, viz., the normal silver periodate $AgIO_4$, and the tetra and penta argentic periodates $Ag_4I_2O_9$ and Ag_5IO_6.

IODINE AND NITROGEN.—These elements combine together in various proportions, producing a series of black powders which explode on being touched.

COMBINATIONS OF THE HALOGENS WITH ONE ANOTHER.—Bromine absorbs chlorine, forming an orange-coloured liquid which easily decomposes. Iodine also combines with bromine and chlorine to form a series of unstable compounds of variable composition.

FLUORINE (F=19).

This element is widely distributed, but has not at present been isolated. It exists in the bones, teeth, blood, and milk, in plants, etc., also in several minerals mentioned below. Fluorine combines readily with hydrogen and silicon, but no combinations with either oxygen, nitrogen, or carbon are known.

HYDROFLUORIC ACID, HF=20.—Oc.: Found as the calcium salt as Derbyshire or fluorspar CaF_2, and with aluminium in the minerals cryolite, topaz, etc. M.: By heating calcium fluoride with sulphuric acid in a lead or platinum retort. Eq.: $CaF_2 + H_2SO_4 = CaSO_4 + 2HF$. P.: It is a colourless gas which fumes strongly in the air and has an intense affinity for water. The gas and its solution rapidly attack glass or any material containing silicon. (*Note.*—This acid must be used with care, as it produces painful and dangerous wounds if allowed to touch the skin). Hydrofluoric acid readily attacks most metals, forming fluorides, of which some form volatile, corrosive liquids, and some are gaseous. The majority, however, are solid, and of these the most important soluble salts are those of silver and mercury, and the insoluble are calcium, barium, lead and copper, etc.

The most important compound of hydrofluoric acid is its combination with silicon, called silicon tetrafluoride, or silicon fluoride, SiF_4, formed whenever the acid comes in contact with any substance containing silicon, or its oxide, silica. Eq.: $4HF + SiO_2 = SiF_4 + 2H_2O$. Silicon fluoride is a heavy, colourless fuming gas which dissolves in and is partially decomposed by water, throwing down silica in a gelatinous condition and forming silicofluoric acid. Eq.: $3SiF_4 + 2H_2O = SiO_2 + 2H_2SiF_6$.

Test for Hydrofluoric Acid.—By its etching glass. The most convenient way to see this is to cover the convex side of a watch glass with a thin layer of wax, and trace some design with a metal point through the wax covering. On placing a glass prepared in this way over a platinum crucible containing the substance to be tested, and some strong sulphuric acid, on the application of heat, hydrofluoric acid will be evolved if any fluoride is present, and the exposed portion of the glass will be etched by its action. A lead dish can be used instead of the platinum vessel, but this should be heated over a water bath. It is as well to fill the concave side of the watch glass with water to prevent the wax melting. (*Note.*—Hydrofluoric acid should always be kept in gutta-percha bottles). U.: For etching glass (the gas gives a matt surface, and the solution a bright etching). The calcium salt is used as a flux, and the ammonium salt to decompose silicates. U. P.: For stripping gelatine films from their glass supports. A dilute acid solution (one of acid to eight of water) is quite strong enough; this must be used with caution, and it is better to cover the hands with gutta-percha gloves while operating with the acid. Porcelain or glass dishes covered with paraffin or beeswax will resist the action of the dilute acid for some time.

(*To be continued.*)

ILLUSTRATED SUPPLEMENT,

Monthly Competition, No. 40, "Portraiture and Figure Study."

CLASS I.

SMALLRIDGE, C. (Ivy Bridge).—"The Last Nail." Optimus R. R., *f*/16; cap off and on, September, good light, 2 p.m. "Haze on the left side of picture produced by smoke issuing from doorway." A very pleasing subject and a nice soft print; it might possibly have been improved by leaving out the old man on the right and making the boy on the left lean over the woodwork.

ASHTON, E. R. (Tunbridge Wells).—"An Arab Household, Tunis." Ross' rapid rectilinear, *f*/16; 5 sec., April, dull and raining, 3 p.m. "The pointed head-dress is worn by the married women, and the eyebrows are heavily painted. The dark costume is that of a Bedouin woman." There is, we think, no call for the third figure bearing the water jar. The two in the doorway would be quite sufficient to complete this.

ROCHE, A. (Cork).—"Contemplation." French R. R. lens, *f*/11; 4 sec., March, diffused light, mid-day. "The photograph is of a Dominican friar in his cell, hence the title." A good picture, well thought out, and beautifully soft and delicate. We should much like to have a rough sepia print of this.

CROSSE, S. (Burslem).—"A Crack Shot." French R. R. lens, *f*/16; 2 sec., August, good light, noon. A very happy and very natural bit of grouping; every face is intent on the result of the knuckle down.



No 1.] "SHOEING THE GREY MARE." [*C. Smallridge.*
SILVER MEDAL.

CARRUTHERS, G. A. (Liscard).—"The Foster Mother." French half-plate R.R., *f*/16; shutter, May, bright sunshine, 6 p.m. The scene is a natural one, no posing. "The kittens were found in one of the outhouses and saved from a watery grave by request of the bairns." The only thing at all offending in this is the rather too white apron of the figure on the right; the idea is very good.

HARDING, G. (Wordsley).—"A Morning Polish." Single lens, *f*/16; 2 sec., September, good light, 9 a.m. Rather too many straight lines, and the print is flat and overtoned.

WYNNE, G. F. (Wrexham).—"Good Morning." Ross rapid rectilinear, *f*/8; 1 sec., August, diffused light, 11 a.m. "The picture was taken in an angle of the house and a high wall; the background, a curtain hung over a clothes-horse and the top light shaded with a carriage umbrella." A beautifully soft rendering of white drapery, and would have taken a higher place but for the lines of the cot.

EDMONDSON, W. B. (Oldham).—"Good Morning." Optimus R.R., *f*/22; 1¾ sec., August, rather dull, 1 p.m. In this, although the idea is good, the figures are so small as to play but a secondary part in the picture.

ORR, F. HARMAN (Kingstown).—"Playing at Afternoon Tea." Dallmeyer quarter-plate portrait lens, about *f*/4; 1-10th sec., June, bright light, and out of doors, 1 p.m. "Taken in an ordinary sitting room near window." The print is a little too crowded with figures, but otherwise it is beautifully soft and delicate.

KNOWLES, J. F. (Wallasey).—"Leisure Moments." Swift 8 by 5 Paragon, *f*/32; 3 sec. in the shade, May, bright light, 4 p.m. "Developed with hydroquinone." Too harsh and brilliant; a far better result could have been obtained on a rough-surface paper.

ELKINGTON, E. M. MISS (Wolverley).—"The Village Blacksmith, Oberammergau." Watson's R. R., *f*/16; 10 sec., August, bright light, 2 p.m.; Iso film. "The shirt was blue. There was no sun on the subject, it being behind the workshop." The shirt in this is a great deal too white and clean, and the man should have been looking at his work.

VAUGHAN, W. F. (Torrington). — "Companions" (two children reading). Single lens, *f*/11; 3 sec., May, bright diffused light, 11 a.m. "Taken in an ordinary room through an open window. Printed deeply to throw reclining figure well into relief." An exquisite little bit of child portraiture, which could have been cut down with advantage.

JUDSON, T. B. (Worcester).—"Portrait of a Lady." Optimus R. R., *f*/8; 4 sec., August, good light, arranged, 5 p.m. "No head-rest was used." An unusually good bit of amateur portraiture, and if this competitor had but cut out the curtain on the left he might have taken a prize. We would suggest cutting the film of this right off the negative.

ARCHER, H. F. (Clapham). — "Interested." Hockins' portrait lens, *f*/22; 10 sec., August, hazy light, 3 p.m. "The picture was taken in a room with one window, the sitter being four feet away from same. A white sheet was used on the shaded side. Exposed for shadows." Another delicate soft-lighted result spoilt by the vignetting.

SEARS, H. G. (Birmingham).—"A Cottage Door Conference." Optimus R.R., *f*/16; 4 sec., July, good light, but no sun, 4 p.m. Rather too palpably posed, and we do not see why the old man should have his eyes shut. Technically a good print.

LEACH, T. (Rochdale).—"Industrious." Taylor, Taylor, and Hobson's R. R., *f*/11; 1 sec., July, fairly bright, but no sunshine, 4 p.m. A soft little picture, which would have looked better without quite so many bricks and spotty flowers in the background.

NICHOLL, A. C. (Cheltenham).—"Supper Time." Zeiss' lens, Series IV., *f*/12·5; 3 sec., August, taken in shade, 4 p.m. "Taken in stable yard, sheltered from direct sunshine by buildings." The competitor has missed his picture, the material for which is to be found in the old man's face; too much is shown. It could be cut down with advantage.

TIMS, J. (Ewell).—"A Tiller of the Soil." Optimus Euryscope, *f*/32; 6 sec., September, sunshine, but taken in shadow. "I have tried to suit the tone of print to the occupation of the individual." A fearful colour, and the white spot in the left of picture is offensive.

POLLARD, A. M., MISS (Cheltenham).—"Portrait of Myself, taken by myself without any assistant." Ross' R.S., *f*/16; 1 sec., July, cloud over sun, noon. "This was taken in a garden, and after focussing something placed on a chair, I held the pneumatic ball of the shutter in my hand, sat down on the chair, and exposed." A very soft portrait, though we should have liked it better if printed a little deeper.

STOREY, P. G. (London, N.W.)—"Thumbs Up." Single lens, *f*/8; 3 sec., June, bright light, 10 a.m. "Last Whit Monday my friend was 'taking off' some characters, and I offered to take his portrait, to which he agreed." Rather flat, but tells its own tale well.

MAYSTON, A. E. (Dublin).—"Type of Irish Beauty." R.R. lens, *f*/15; 3 sec., in open air, July, good light, noon. A very delicate print, but would have been improved by a plain background.

CLASS II.

ALCOCK, F. (London). — "Portrait." Single lens, *f*/11; 12 sec., August, 3 p.m.; platinotype cold bath; half-plate. Rather underexposed, but a happy bit of lighting.

BARBOUR, T. M. (Bury).—"A Few Fresh Oysters, Sir!" R.R., *f*/20; ¼ sec., September, strong sunlight, 4.35 p.m. "I was photographing on Blackpool sands when this boy asked me if I would like a few fresh oysters. I thought he would make a good figure. What say you?" Well, so he does, but the print is flat, and the background spoils it.

BREMNER, R. G. (London). — "Bargaining." R.R., *f*/32; 1 sec., September, good light, 11.30 a.m. The dress of servant is too white, and the three fish all of a row immediately attract the eye.

BROOK, STANLEY (York).—"Polly." R.R., *f*/22; 1 sec., noon, diffused light. A very pleasing, soft print, but we should have liked to have seen a plain background.

CLARKE, A. (Basingstoke). — "Scissors to Grind." Single lens, *f*/16; ½ sec., July, sunshine, 11 a.m. By no means a bad little study, but a little too heavy in the shadows.

DART, W. B. (Torrington). — "Fancy Dress." R.R., *f*/11; 5 sec., August, fair light at 4 p.m. This figure would have looked far better against a plain white background; the natural one is not suitable.

DAVIE, S. R. (London).—"Mending the Lines." R.R., *f*/16; instantaneous exposure, August, bright sunshine, noon. "High wind blowing at time; the man kept on with his work the whole time." This may be, but both he and the old lady are staring hard at the camera.

DUNNE, M. J. (Co. Meath).—"Washing Day." R.R., *f*/12; September, noon, platinotype. Too evidently made up, and none of the figures are suitable, or really engaged in their work.

DYMOND, C. F. (Saltash).—"The Gardener's Daughter." Single lens, *f*/22; 2 sec., September, diffused light, 4.40. "My first attempt at figure study." We were strongly tempted to put this in the first class, but it is too formal; the pot on each side, the arch of creeper and the figure in the middle. The face and drapery are so beautifully soft that it deserves enlarging and cutting out from its surroundings.

EARLES, Miss A. F. (Enfield).—"Finishing Touches." Single lens, *f*/24; 15 sec., August, dull, 7.20 p.m. The first thing to strike one about this picture is the exceedingly uncomfortable way in which the artist holds his brush. It is nice and soft, but rather crowded up with too many alligators, etc.

FOSTER, P. S. (Halifax)—"Tea Time." R.S., *f*/11; 3 secs., July, good light, 11 a.m. A Japanese fancy dress, well carried out so far, but the surroundings are not in keeping. Print soft and delicate.

GREENALL, C. E. (Kendal).—"I'se not Afraid." R.S., *f*/11; good light, 5 p.m.; platinotype. Wants cutting down badly, and a great deal too black and white, but a pretty idea.

KEY, T. (Grantham).—"The Village Cobblers." Single lens, *f*/30; 12 sec, bright light, September, 4 p.m. "First time of competing." Rather too hard, and spoilt by the box in the front.

LORD, R. S. (Eccles). —"A Boatman." R.R., *f*/8; 2½ sec., September, sunshine, noon. Print flat, and over-toned.

MICHIE, R. H. (Hamilton).—"Crossing the Stream." R.R., *f*/8; $\frac{1}{15}$ sec., noon, bright light, June. Too black and white, and more properly classed as landscape with figures.

NEWLAND, A. G. E. (Assam). — "The Field Hospital." R.R., *f*/25; $\frac{1}{8}$ sec., diffused light, 4 p.m. A clever bit of grouping, which comes all the way from Assam.

ROBINSON, J. W. (Lewes). — "Air Balls, 1d. Apiece." Single, *f*/9; September, sunshine, noon. A good subject spoilt by the vignetting and shape.

SALMON, P. R. (Cambridge).—"Potato Peeling." R. R., *f*/16; half sec., August, bright, 3 p.m. Print a great deal too hard, on matt-surface, rough sepia; it might look better.

TEVERSHAM, R. K. (Kilburn.) — "The Rivals." R. S., *f*/16; 2 sec., 11 a.m., July. A good subject, but there was no need to cut off the elbow, and printed too deep, and a hideous pink tinge.

TIMMINS, C. A. (Runcorn).— "Pleasant Pastimes." R. R.; *f*/11; 12 sec., July, diffused light, 5 p.m. Too black, and too much in it.



No. 3.] "AN ARAB HOUSEHOLD." [*E. R. Ashton.*

BRONZE MEDAL.

UDALE, F. (Uttoxeter).—"The Horn Dance." R. R., *f*/22; 2 sec., September, diffused light, 8 p.m. We hope to be able to reproduce this print in a later issue, as it is a curious old custom.

WESTLAKE, G. W. (Sheffield).—"The Peddler." July, noon, very dull light, R. R., *f*/16. A good study, but rather over-printed.

WOOD, L. J. (Botcherly).—"Children Wading." Single, *f*/20; ¾ sec., August, sun, noon. Too much unnecessary matter in it, and figures too stiff.

CLASS III.

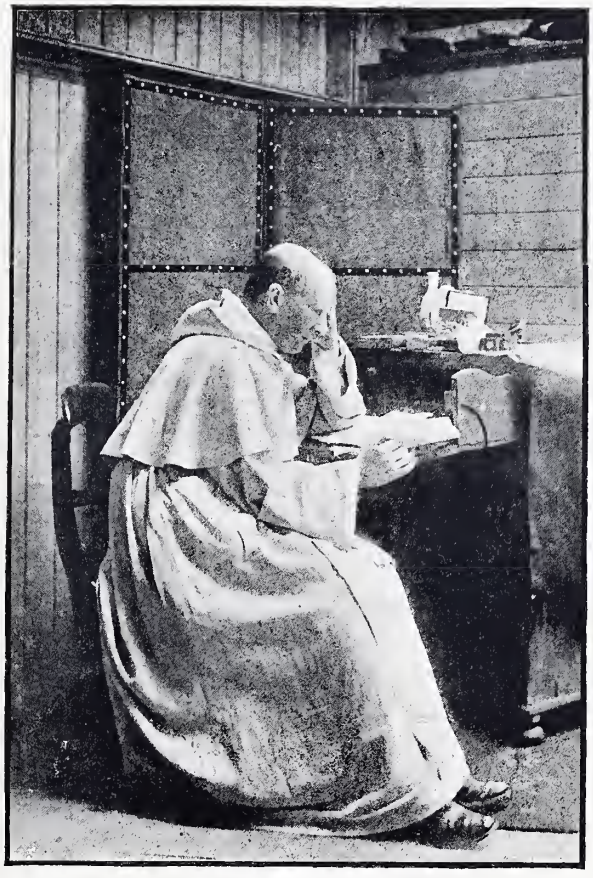
Adams, A. J.	...	Ambleside	Ash, W. H	...	Torquay
Adams, E. (Miss)	...	London	Bain, E. G.	...	Italy
Adams, H. F.	...	London	Bishop, W.	...	Ellam
Adamson, J. B.	...	Liverpool	Boys, W. H.	...	Southport
Allen, G. T.	...	Battersea	Colahan, J.	...	Surrey

Collins, A. (Miss) ...	York
Crozier, J. W. ...	Hexham
Edwards, G. ...	Hereford
Edwards, H. ...	Birmingham
Eyre, H. S. W. ...	Sussex
Gaunt, D. G. ...	Leeds
Gethen, C.	Hereford
Gibson, J., jun. ...	Hexham
Golding, A. J. ...	London
Gould, R.	London
Gray, J.	Glasgow
Hack, H.	Fife
Harden, N. T.	Upper Norwood
Holland, B. (Rev.)...	Huntingdon
Jones, J R. ...	Liverpool
Laidler, T. S.	Felling-on-Tyne
Lewis, A. H. ...	London
Macey, G. W. ...	London
Mangham, W. ...	Sheffield

McClintock, R. L.	Woolwich
Niblett, J. (Miss)...	Ledbury
Patterson, T. ...	Preston
Perks, W. G.	Walthamstow
Petty, D.	London
Rivington, J. A.	Littlehampton
Scott, T. B. ...	Belfast
Severs, J.	Kendal
Shelley, C. E. ...	Herts
Sullivan, J. E. ...	Dundrum
Tapp, M. E. ...	London
Tonkin, H. ...	Penzance
Twemlow, S. P. ...	Cheshire
Wall, L. M. (Mrs.)	Ashburton
Walker, M. (Miss)	Rickmansworth
Wilkinson, M. A. ...	Kingsland
Windeler, W. B. ...	Surrey
Young, H. S. ...	London

CLASS IV.

Adams, F. W.	London
Alexander, V. A. ...	Glasgow
Banks, P. F. ...	Norwich
Bibby, W. H. ...	Blackburn
Cain, J. J.	Millom
Fidvog, A. ...	London
Gabriel, J. E, ...	London
Gillett, C. J. ...	Moreton
Howes, H. S. ...	London
Huddy, J. B. ...	Richmond
Hurman, E. ...	Swindon
Jackson, W. A. ...	Glasgow
James, E. H. C. ...	Bridgewater
Jones, F.	Birmingham
Jones, E. P.	Wolverhampton
Leicester, J. C. H...	Dulwich
MacAdam, J. A. ...	India
Matthewson, G. ...	Kirkcaldy
Parkes, A. E. ...	Old Hill
Pasco, G. S.	... London, N.E.
Petrie, A.	Dundee
Richardson, E. H...	Gateshead
Ridgsall, K. ...	Beckenham
Ridler, W.	Manchester
Robertshaw, J.	... Hebden Bdg.
Rydings, A. ...	Manchester
Sharland, Rev. G. F.	Huntingdon
Shaw, J.	Kirknewton
Sheaff, G. H.	... Birmingham
Smith, J. T... ...	London, E.
Spalding, F. W. ...	Norwich
Sutcliffe, J... ...	Halifax
Wing, F.	Sheffield
Wood, J. G. ...	Glasgow
Wylie, C. A. ...	Liverpool



No. 3.] "CONTEMPLATION." *[A. Roche.*

CERTIFICATE.

New Application of Photography to Litho Printing.—A method has just been patented in the United States, says *Paper and Press*, for producing photographs, images and pictures on hard surfaces, as glass, metal, porcelain, etc. The invention consists in applying to such a surface a coating of a solution of guaiaretic acid or of the guaiaretate of a metal or organic base, and submitting the so coated surface under a photographic negative or a transparent positive of the image to the action of the light, whereby the parts of the coating exposed to the light through the unaffected parts of the negative or transparent positive become hard and insoluble, then developing the coated surface, and finally applying to the film a suitable acid, whereby the picture is etched into the surface. The hard portions of the film which are not affected by the acid are then removed. Dr. Jacobs has found that the guaiaretic acid ($C_{20}H_{26}O_4$) or its metallic salts, or those made of guaiaretic acid with organic bases, by exposure to light change their properties as to solubility and as to resistance in oxidising agents. The guaiaretic acid, as well known, is, freshly prepared, soluble in alcohol, ether, bisulphide of carbon, chloroform, acetic acid, benzole and other substances; but by exposure to light it becomes less or entirely insoluble in these substances, like asphaltum or resistance—that is to say, the salts of abietic acid ($C_{44}H_{64}O_5$). As far as his researches go, guaiaconic acid ($C_{12}H_{22}O_6$) is formed by this action, which latter is still more oxidised by certain likewise acting substances. A similar effect takes place by exposing the salts of guaiaretic acid with metals or organic bases, also the chlorine, bromine, and iodine substitution products or the corresponding salts to the action of the light. Certain colours—for instance, aniline violet, magenta-red, safranine—when combined in minute quantities with guaiaretic acid or salts accelerate the action of the light—*i.e.*, they act as sensitisers. He furthermore found that a thin coating of this acid or its salts laid upon a hard surface and exposed to the light for a certain time becomes impermeable by dilute mineral or organic acids. These properties of guaiaretic acid or its salts, as aforesaid, render them useful for the production or reproduction of pictures, photographs, ornaments, etc., by means of the actinic rays. In carrying out his invention to produce a photograph, picture, image or ornaments on a hard surface, as metal, porcelain, glass, lithographic stone, etc., he first dissolves 100 parts of crystallised guaiaretic acid, or, to obtain a more sensitive film, 120 parts of dry amorphous guaiaretate of silver, or of a corresponding quantity of the zinc, lead or magnesium salt (which latter, are less sensitive than the silver salt) in 500 parts of pure benzole He may use the salts coloured with three to four per cent. of aniline-violet or another aniline colour or colours. He then prepares a rubber solution by dissolving 7½ parts of dry caoutchouc to 500 of benzol. He may also use a collodion solution instead of rubber, the collodion solution containing one to two per cent. of nitrocellulose; but he prefers the above-described composition of rubber. Both solutions are then thoroughly mixed together and the well-cleansed surface on which the pi ure is to be produced is carefully coated with the mixture thus obtained in the dark. Then the so coated surface is exposed under a negative or transparent positive to the action of light, a ten to twelve minutes' exposure to direct sunlight being sufficient to harden the exposed parts and to render them insoluble in the developing bath, and the best he found to be composed of a mixture of one part of benzole and five parts of spirit or turpentine. Of course, other developers can be used. The parts of the film which are not affected by the action of the light are thereby removed and the picture appears on the surface. The plate is then dried and etched by appropriate acids, according to the nature of the surface to which the sensitive film is applied; or it may be printed from directly with lithographic ink. The guaiaretic acid which he uses is prepared in the following way:—Two parts of guaiacum are dissolved in ten parts of alcohol, filtered and concentrated to a thin syrupy solution. Then it is mixed with a warm concentrated solution of one part of potassium hydrate. After twenty-four hours' standing it forms a mass of the consistency of pulp and is pressed through a filtering cloth. The remainder is thoroughly washed first with alcohol and then water and crystallised from a medium of dilute alcohol.

The following gentlemen have kindly consented to act as judges at the South London Photographic Society's Exhibition to be held on the 24th, 25th, and 26th November, 1892, at the Peckham Public Hall, viz., F. P. Cembrano, jun., A. Pringle, and L. Warnerke.

Mr. F. W. Levett, Hon. Secretary, Brixton and Clapham Camera Club, requests us to notify the change of his address, which is now 11, Corrance Road, Acre Lane, Brixton, S.W.

The Stanley Cycle Show, which will be held at the Royal Agricultural Hall, Islington, N., from November 18th to 26th, inclusive, will include a section devoted to photographic apparatus. Entries close on November 5th, and full particulars may be obtained from H. E. Smith, 29, Finsbury Pavement, E.C.

American Work and Workers.*

BY MISS CATHERINE WEED BARNES.

IN speaking on a similar subject before the recent Edinburgh Convention, I could only venture on a very general treatment of it, so that when your kind invitation to address you was received, I decided to speak further on what camera workers are doing in the United States. We draw the lines quite as sharply as in Europe, and have as various species of the genus "crank," but, after all, little really progressive is ever accomplished in the world without the workers being looked upon as mentally unbalanced, to state it mildly, by those not possessed of a like enthusiasm. The devotees of the camera must bear their share of this experience, for, in spite of all proof to the contrary, the uninitiated are still unwilling to believe that the results of photography are not due to luck, or, at least, a cleverly managed trick. We can well afford to smile at this view, however, realising as every genuine worker does the higher position it is constantly assuming among the world's actively beneficent forces. With us, as more than once stated, the camera is too often considered only as a means to kill time, and the fact is then lost sight of that the so-called "snap-shotters" possess in their ever-ready instrument a wonderful though too often abused power. But they should not claim for it perfect equality with tripod work. My own preference for the latter is mainly that, as more care is usually given to it, the results are better than hand work, but it seems also as if the former admitted of greater latitude in composition, to say nothing of subsequent treatment of the negative (which when well done is perfectly legitimate from an artistic standpoint), and, I say it advisedly, the greater choice as to selection of subject it places in the workers' hands. This is without detracting from the use of hand-cameras, which form a department of their own covering an important field, and which should not necessarily conflict with tripod work. In the hands of any one who has gained large experience with the tripod, the hand-camera is a valuable power, but with us the latter is usually considered as being easier to manage than the former. It is, therefore, preferred by beginners, and its results cannot justly be compared with stand exposures.



No. 4.] "A CRACK SHOT." *[S. Crosse.*

There is a very amusing amount of ignorance in the land on the subject of shutter exposures, and the idea seems prevalent that instantaneous work (I dislike the term) is the result of some occult power residing in and solely due to the instrument, having nothing whatever to do with the operator. I was asked lately on the shore of Loch Katrine, where my 8 by 10 tripod camera was being used, "Does your camera take instantaneous pictures?" "That depends on how you use it," was my reply, which seemed to puzzle my interlocutor. With us, as well as here, the camera army is divided into what might be termed "tripods, and anti-tripods," but we seldom use one to the exclusion of the other except among those who do little if any really serious work. As long as the average user of a camera is satisfied with playing at photography, he will never consider it is worthy special respect. It should be stated in strict justice that, as a whole, American clubs offer finer working facilities than those of any other country, and are imbued with a progressive spirit which readily embraces every new improvement. Americans are, and I claim it without undue self-praise, not only able but willing to learn, where they make up their minds the game is worth the candle, and a really good idea is certain sooner or later to find general support. We do not hold on to any method or opinion because of proper respect for age, or welcome it because it is young.

One point which to my knowledge has never been considered is, that camerists have widely differing gifts in the photographic field. Some do best in the studio, some with architectural subjects such as interiors, and others with hand-cameras. Very few can or should undertake to do all these with hope of equal success. I think one fault with us is that we are apt to attempt this all but impossible task. Let me emphasise one point in favour of American methods, or rather, instruments, which is to some extent being introduced in England, the question of lighter plate-holders. Englishmen claim that with them bulk is as great a consideration as weight, but to me the point does not seem to be well taken. Our holders may not be as ornamental in appearance as the smoothly polished ones so general here, but they serve the purpose of keeping out light just as well, and the slides are not nearly so inconvenient as the permanent ones which project beyond the camera, any moment liable to cause vibration or to be broken off by a sudden movement of the operator. I must also endorse having the word "exposed" printed on one side of the slide, which if the operator takes care to replace correctly, positively prevents double exposure. Their use, like most of the other mechanical appliances, requires a certain amount of brains—otherwise commonsense. The tripod I am now using, and have for several years, is easily and quickly adjusted, and packs into a small compass; as does the camera, which closes in on itself, thus protecting the lens, if a wide-angle one; and the hinged ground-glass is discarded in favour of one which permits being held back so as to let the plate-holder take its place, and when the holder is withdrawn the glass slips back into position. The tendency is growing to have as few projecting screws or other parts as possible, and those recently made are particularly noticeable in this respect. Opinions differ as to the advantages of front or back focus, being slightly in favour of the former except in the studio and with enlarging or reducing work. Few if any of our cameras are made to have the tripod top permanent in the instrument, but it does save room, and the idea is therefore good. We are in serious danger of making our instruments, especially the cheaper grades, altogether too light, but the demand is for portability combined with cheapness, and this leads to an enormous sale of small size instruments. I have one camera in my large collection which cost hardly twelve dollars, camera, tripod, plate-holder, lens, and carrying case complete, and it does very tolerable work. For some inscrutable reasons, the small prints in our exhibitions are called the English size, although I noticed in the various excursions at Edinburgh, very few even whole-plate cameras. With you, as with us, the reason is usually given that enlargements are always available, but my preference is always for direct prints. It would seem to be a fitting matter for international arrangement, the coming to some agreement for uniform sizes of plates. Our favourite size, notably for hand-cameras, is 4 by 5, and 5 by 7 has superseded 5 by 8 as giving a better proportioned picture; and from thence we go through 8 by 10, 11 by 14, up to as high as 18 by 22, but even the most ambitious seldom venture beyond 8 by 10. Before we made such excellent cameras we were dependent on

* Read before the Birmingham Photographic Society.

foreign makers, and those of us who were not natural mathematicians were often annoyed by what we considered inconvenient numbers, those with fractional additions. The reason given us for retaining these latter has been that the glass thus cuts to better advantage, but I fail to see why it is not possible in the first place to make the sheet of glass of such dimensions as to cut evenly into any size plate desired. I have found it difficult to get 5 by 7 plates in England, though not 8 by 10.

We are taking great interest in lantern exhibitions, and it is an encouraging sign of comradeship that so many sets are being exchanged between English and American workers. If each, however, will insist on retaining a different size plate the carriers at least should be international so as to hold either size conveniently. We are to some extent using the arc light at these exhibitions as well as for enlarging and making slides, but it is so much more powerful than the oxy-hydrogen, that the slides should be made with that point understood, or they will show weak on the screen. Our manufacturers make excellent negative and lantern plates, and I have been taken to task more than once somewhere, for saying ours are more rapid than the English, often a very questionable advantage, but actual experiment has proved to me that with two representative makes of lantern plates, I had, under precisely similar circumstances, to give the English three times the exposure of the Americans to gain the same result. We are giving increasing attention to the nature of the subject in matting and mounting our slides, and the old circular or even uniformly round cornered mats are now seldom seen. I must mention that in one of the New York societies the slides are thrown from behind on the screen, which is transparent, giving a charming ground-glass effect. One amateur having a private lantern, projects his slides on a heavy ground-glass placed between two parlours and framed by curtains. The effect is excellent. With my own oxy-hydrogen apparatus I use a heavy linen screen buttoned on a framework like an old fashioned quilting-frame set on rollers. This is thoroughly wetted and then stretched out. The light is powerful, and every slide I send out is thus tested before mounting. My mats are all cut from special designs, and sometimes a dozen will be tried on one slide, and the same slipped into my lanternscope for examination before a choice is made. We have what are called test nights in two of the New York societies, when one or more of the lantern committee attend and give a final decision before the slide is considered suitable for a general audience, though the meeting is very informal and members feel perfectly free to express individual opinion, to the pleasure or otherwise of the respective slide makers. In one society, if desired by any member, the meeting room is at his or her disposal for an entertainment, and one of the lantern committee will attend to manage the slides. Films in place of glass seem to make their way slowly among us, in spite of their undeniable merit of lightness, and I can speak feelingly on the subject considering the quantity of 8 by 10 plates I have to carry home in October. Films have certain defects which make me as yet prefer glass, but demand always creates supply, and I expect to see them eventually almost supersede the latter. One of our leading firms making photogravures urges me to copy all my valuable negatives on celluloid, as a precaution in case of injury to the original. The idea is a good one, as experience showed when one of my 14 by 17 negatives were smashed on its way back to me from the reproducers through careless packing. He made me a negative, original size, from the small transparency he used, but the qualities of the original would have been far better preserved by the method above mentioned. Coming to the question of development, there is much divergence among ourselves, and what little developing I have done in England has shown me that this is especially marked when compared with English methods. We are not given to using 10 per cent. solutions as is much done here, for many of our workers are skilful chemists and have a great liking for experimental work both in development and printing, studying the scientific theory as well as practice. Some workers have fitted up laboratory attachments to their developing rooms; I must say, though, that it is not always those who have tho greatest number of well filled shelves and shining weights who actually accomplish the best scientific results. The use of acid sulphite is quite general, and though in the club dark-rooms the hypo solution is ordinarily kept in stock, home workers prefer to make it up fresh, graduating its strength as desired. My own custom is to partly fill my fixing dish with water and then put in a handful or more, as judgment dictates, of hypo crystals, and a little acid sulphite to keep the bath clear; even then I do like to dip the negatives or lantern slides in a bath of saturated alum and sulphuric acid, either before or after fixation. When pyro, which is still first with a large majority of our workers, is used with ammonia or soda, it has for a long time been my custom, many times suggested to others, to make up solutions of sulphite and carbonate of soda in large quantities by hydrometer measurement instead of weight, the pyro being always made up fresh one to twelve, and old developer never being kept under any circumstances.



No. 5.] "THE FOSTER MOTHER." *[G. A. Carruthers.*

Then, with a little, very little, saturated bromide of potassium, not ammonium, and plenty of water, the operator usually has only himself to blame for failure. It seems a little strange that English workers prefer ammonia to soda as an alkali, and Mr. Bothamley in his Edinburgh paper gave a very clear idea of the action of each, which to my mind seemed rather in favour of soda. I was asked in London by a scientific expert which side of photography was my "particular vanity," as Sam Weller would say, and on my describing the advantages of my devoloping room was triumphantly told that such was practically acknowledging photography science, not art, a dictum to which I promptly and positively demurred, claiming that each had its own special standing alike worthy, thereby proving the length and breadth of the photographic field.

We are turninig more and more towards matt-surface prints, largely platinum and kindred processes, such as Kallitype No. 2, and plain salted paper, but we make a number of bromides, especially in sepiatones, which are considered a refreshing change. The Manhattan paper admits of several tones according to development, and prints also made on celluloid as transparencies are likewise very effective. These latter processes are quite slow. The paper sent out by the Eastman Company seems to fulfil the promises made for it, and can be utilised for either glossy or matt-surface prints. It is to be hoped that our workers will after a while give carbon printing the place it should occupy among us. We admit its beauty, but only a few use it, though an effort is being made now to encourage amateurs to try it. Two or three of our leading manufacturers are making the tissue, but the heat of our summer renders its use mostly confined to

the winters when the light is poor. We trust that every year, we, the two English speaking nations, will grow into closer accord and each learn from the other of its best characteristics. There should be only a healthy spirit of rivalry, enough to bring out the latent energies of each nation, and thus continually advance the work in which we are mutually interested. It is growing rapidly among us, constant improvements are being made, new apparatus and methods of work invented, new societies formed, and besides the regular photographic journals the daily press gives space to all especially interesting meetings, and purely literary magazines more and more are utilising the art science in their pages for illustrations, and in the shape of articles. Photography has a great future among us, and he would be indeed a prophet who could reveal it, but we never will make lasting and steady progress without keeping thoroughly informed on the work being done this side of the ocean. We should mutually take part in each other's exhibitions, and can in no better way realise our deficiencies and gain courage from our evidences of progress.

Glycin.

A NEW DEVELOPER.

DR. EDER gives the following report in the current number of the *Photographische Correspondenz* of the new developing agent glycin, which was discovered in the chemical laboratory of Hauff in Feuerbach, the maker of amidol and metol. Glycin is oxyphenylglycin, and has the formula of $C_6O_4HHNHCH_2COOH$, and is prepared by the action of chloroacetic acid onamidophenol.

It is a very light, shiny, powdery mass, which only dissolves in water on the addition of an alkali (caustic) or alkaline carbonate to a nearly colourless liquid, which will keep in the presence of sulphite and acts as a vigorous developer.

The following formula will be found satisfactory for the preparation of a developer for gelatino-bromide plates:—

1. Glycin-potash Developer.

Glycin	5 parts.
Sodium sulphite (crystal)	15 „
Carbonate of potash ...	25 „
Water	09 „

This concentrated solution is mixed with three or four parts of water before use. The image appears gradually when using this developer, first the light lights and then the half-tones. The colour of the silver deposit is a pleasing greyish black, the gelatine film itself remaining free from any stain. The sensitiveness is somewhat less than when using metol, amidol, hydrokinone, or pyrogallol, but the negatives are characterised by an absolute freedom of fog.

Addition of bromide of potassium acts as a restrainer, also dilution with water, just as with other developers.

2. Glycin-Soda Developer.—The glycin-soda developer possesses a lower reducing power, but still gives clear negatives. A developer, which is at once ready for use, may be prepared as follows:—

Glycin	3 parts.	Sodiumcarbonate(crystal)	22parts
Sodium sulphite ...	15 „	Water	200 „

The solution may be used at once, and will keep for a long time unchanged in well-stoppered bottles.

This developer gives very clear and delicate negatives. By reducing the proportion of soda the negatives become still more transparent; dilution with water acts in the same way. By the use of bromide of potassium considerable over-exposure may be compensated for.

Glycin may be designated as a slow and fogless acting developer, which cannot be reckoned under the head of rapid develcpers (*e.g.* metol, etc.), but is noteworthy as it gives very clear transparent and slow developing negatives. Glycin is therefore destined to render very good service for many purposes in photography.



No. 6.] "A MORNING POLISH." [*G. Harding.*

Holiday Resorts and Photographic Haunts.

COUNTY DOWN.

BY C. E. S.

THOUGH the adjoining county of Antrim must certainly be awarded the palm for varied and beautiful scenery in the North of Ireland, County Down is well worth a visit, and will give the amateur photographer lots of work to do. As for County Antrim, Belfast (which lies partly in each county) forms the best starting place for trips. If the tourist has from ten days to a fortnight at his disposal, I should advise him to spend four or five days in making day trips from Belfast, and the remainder at Newcastle or Rostrevor, as a centre for the southern and most beautiful part of the county.

First Day.—Take an early boat or train to Bangor, about ten miles from Belfast. On the way the hand-camera man is sure to get some good shots at shipping if he goes by boat. Take a look round Bangor, then walk over the hills about six miles to Newtownards, visiting on the way Helen's Tower. This is a tower erected on the highest hill in his estate by Lord Dufferin, in memory of his mother. The interior is worth seeing, as on the walls of the principal room two poems are inscribed, one by Lord Tennyson, and one by Robert Browning. A short way out of Newtownards is another tower, Scarborough Tower, which may be seen many miles away. It was erected to the memory of the third Marquis of Londonderry. As the view is very extensive from it, it is worth visiting, and a good photograph of it may be got from the west side. From Newtownards the train may be taken back to Belfast.

Second Day.—A return ticket to Newtownards should be taken, and from there the "long car" (particulars of which are to be found in the Belfast railway guides) to Grey Abbey, on the eastern shore of Strangford Lough. This is one of the most beautiful ruins in the country, and half a dozen plates may easily be expended on it. The Abbey was founded in 1193 by the wife of John de Courci, and destroyed in 1641 during the rebellion. If a long day is devoted to this excursion, Portaferry, about ten miles further from Newtownards, may also be visited. It is a tlitle fishing village picturesquely situated on the narrow channel connecting Strangford Lough with the Irish Sea. In places it is wooded down to the water's edge, and reminds one of the Kyles of Bute. The hand-camera man should look out for groups of children, as many of the little country urchins along this coast are remarkably pretty.

Third Day.—At least one day should be spent in the heart of the country, and no better place can be chosen to give one a good general idea of its character than the Spa, near Ballynahinch. County Down is often compared to a basket of eggs, and the comparison is by no means inapt. For miles one may not see sufficient level ground for a cricket pitch, and yet no high hills, just a succession of small rounded hills, which may not unfairly be compared to magnified eggs.

The train is taken to Ballynahinch, and from there a 'bus runs to the Spa, as "truly rural" a spot as one could find in the United Kingdom. There are two medicinal springs, from which

few people drink now-a-days, though they used to have considerable repute, and are really as beneficial as some English and Continental waters to which invalids flock in crowds. After a look at the springs (and of course a drink of the waters), the tourist should walk or drive past the small lake to Slieve Croob, a hill four miles from the Spa, rising to a height of 1,755 ft. From its summit a magnificent view is got, and on the road to it a number of pretty bits for the camera will be found. If the visitor chooses to walk back from the Spa to Ballynahinch, he may go through the beautiful demesne of Montalto without lengthening his journey.

The Giant's Ring, four miles from Belfast, should certainly be visited to see a good example of the ancient cromlechs, or Druidical altars, 366 of which are said to exist in Ireland. This one is fairly typical, six large rough stones placed on end in a circle, with a seventh larger covering stone resting on them. The peculiar feature from which it derives its name is a circular earthwork, about one-third of a mile in circumference, surrounding it. A short way beyond it, at Drumbo, is a ruined round tower. Both may easily be visited in a few hours' drive, and a great deal may be seen if one goes out by the Malone Road, crosses to the County Down side of the river by Shaw's Bridge, and after visiting the Giant's Ring and Round Tower, returns to town by Newtonbreda and Ballynafeigh, and through the Ormeau Park.

Having seen the northern part of County Down, the visitor should now go south, taking the train to Newcastle, nearly forty miles from Belfast. On the way he passes through Downpatrick, the oldest town in Ulster. The Cathedral, beside which St. Patriek is buried, may be seen from the train, but is hardly worth stopping to visit.

Newcastle, the terminus of the line, is a large village lying on the sea shore at the foot of Slieve Donard, the highest mountain in the North of Ireland (2796 ft.) Several courses are open to the tourist on arriving here. If ready to spend some money, he may put up at one of the two good hotels, the Bellevue or Annesley Arms, and from Newcastle as a centre take drives in the surrounding country and climb the mountains from the seafront. If one is prepared to pay less and walk more, he will see the country best by staying first at the good little inn at Bryansford, and then at a similar inn at Kilkeel, the former being at the northern boundary of the Mourne range, the latter at the southern. Both are reached by car from Newcastle, Bryansford being about two and a half miles inland, and Kilkeel about twelve miles along the coast to the south. If one stays at Newcastle, one can make the following excursions partly by car. Bryansford lies between two private parks, both abounding in subjects for the camera.

Castlewellan, the residence of Lord Annesley, should be first visited, as from it one gets splendid views of the whole range of the Mourne mountains. The grounds are only open to the public on certain days of the week, but Lord Annesley is an enthusiastic amateur photographer, and is pretty certain to give leave to anyone applying for it by letter to photograph on any day. The best views are got from the north side of the lake, along the margin of which a road runs. What can the amateur photographer want to make him happy more than a lovely lake, studded with islands, and swarming with water-fowl in the foreground, and a splendid range of mountains rising up beyond? Those interested in botany will note the number and variety of fine trees, many of rare species, each one having the specific and generic names on a label at its base, in a way seldom seen out of Kew Gardens. The best work will be done here on a very clear day with a long-focus landscape lens.

Tollymore Park, the residence of Lord Roden, is an equally charming place, but of a different character. Here the chief attraction is the glen of the Shimna River, a lively little trout stream. The "bits" on its banks are simply endless, but for many of them a rather wide-angled lens is required, and a perfectly calm day and backed plates are desirable, on account of the overshadowing trees. In autumn Isochromatic plates will also be useful.

Slieve Donard may be attacked from Bryansford, ascending the landward side. It goes without saying, however, that the bare slopes of the mountains offer few attractions to the photographer, his best hunting ground being on the "foot hills" and in the valleys. The Shimna river should be followed up to its source, and will afford a delightful day's work; above Tollymore Park it is freer from overhanging foliage, and abounds in small waterfalls. The rocks over which it flows are granite and lend themselves particularly well to good photographic composition. At Newcastle the hand-camera man will, on the golf-links, get many chances of good shots at the golfers with the fine background of mountains. From here the grounds of Donard should be visited, and if there has been rain recently, a very respectable waterfall is to be seen. The shortest route to the top of Slieve Donard lies through this demesne, and the whole ascent takes about two hours to accomplish. The best of all the excursions in the mountains is that beginning at Annalong on the coast, which may be reached by car from either Newcastle or Kilkeel, as it lies nearly half way between the two. It should only be undertaken by pretty vigorous walkers and in clear weather. Starting from the coast, the small Annalong River is followed up to its source in the Blue Lake, and continuing past this, the pedestrian crosses the water-shed between the Annalong and Kilkeel rivers, and then sees before him at his feet the Happy Valley, through which the latter stream flows. The valley here is walled in by mountains over 2,000 ft. in height, rising in steep slopes of heather and great granite precipices. Often not a living creature is in sight; the scene is one of lonely and savage grandeur not soon forgotten. If staying at Newcastle, the tourist should now ascend to the head of the valley, and passing round the west flank of Slieve Donard, return to Newcastle by Donard Lodge demesne. If, however, he is staying at Kilkeel, he may follow the Kilkeel river down the valley to the sea, a longer but easier walk. In all these excursions among the mountains, most delightful baths may be taken in the pools hollowed out in the granite by the water of the numerous streams.

Rostrevor, a quiet little watering place in a most sheltered position on Carlingford Lough, should be visited after Kilkeel. The Mourne Hotel here is one of the best hotels in the county, and is much frequented by invalids in winter and spring, on account of the mild climate of the place. Good lodgings can also easily be obtained.

From Rostrevor one may return to Newcastle by the coast road, or by the inland road through the mountains, or he may take the tramway to Warrenpoint, and thence go by rail to Belfast or Dublin.

NOTE.—The routes given in this, and the former paper on County Antrim, can be best seen on the maps of the separate counties published by George Philip and Sons, 32, Fleet Street, at one penny each.

Photography in Meteorology.

THE Second Report of the Committee, consisting of Mr. G. J. Symons (Chairman), Professor R. Meldola, Mr. J. Hopkinson, and Mr. A. W. Clayden (Secretary), appointed to consider the application of photography to the elucidation of Meteorological Phenomena (drawn up by the Secretary), stated that the work has been continued during the past year along the lines laid down in the Report for 1891.

Considerable additions have been made to the number of observers from whom assistance may be expected, in spite of the removal of several names from last year's list.

The total number of photographs received up to July 23 was 361, representing a variety of phenomena, but chiefly illustrating the results obtainable in cloud photography by various methods. This number, however, does not adequately represent the progress made, for many other photographs have been promised, and will in all probability be received in a few weeks.

The adoption by the majority of the International Meteorological Congress at Munich of the classification of clouds, proposed by Messrs. Hildebrandson and Abercromby, suggested to your Committee that it would be well to adopt it also, at least provisionally. They cordially agree with the action of the English delegates at the Congress in opposing the acceptance of a system which is entirely empirical; but since the great majority of foreign meteorologists have determined to employ it, your Committee consider that they should adopt it provisionally. They consider it will be well to follow the example set by other countries until the further study of cloud-forms, and their relation to one another, renders it possible to make a more scientific code.

Arrangements have therefore been made for the cataloguing of the collections of meteorological photographs in the possession of the Royal Meteorological Society and of the Chairman of your Committee.

PHOTOGRAPHS OF LIGHTNING.

Very few new photographs have been sent in as yet, but from Mr. J. H. Bateman two of great interest have been received. Following the suggestions in the instructions issued last year, two cameras were employed, the first being stationary, and the second moved rapidly from side to side. The plate exposed in the fixed camera shows four flashes, while the one which was moved shows six. A flash which is single on the fixed plate is resolved into three on the moving plate, showing that the flash did consist of a series of discharges along much the same path. The absence of reduplication in the others points to the conclusion that they were single. Two of these single flashes occupy exactly the same relative positions on the two plates, showing that they must have been simultaneous.

Your Committee regret that there should have been no opportunity of carrying out any further experiments upon the phenomena presented by lightning photographs. However, recent discoveries concerning high-tension discharges ought to elucidate the subject. Thus it seems highly probable that the hazy continuous luminosity shown by many photographs may be due to the flame of burning nitrogen.

Before leaving the subject of lightning, it may be pointed out that in Mr. Bateman's photographs the narrow ribbon structure in each flash is no more pronounced in the moving photograph than in the one which was stationary.

The Royal Meteorological Society has received several new photographs of lightning. They all show the narrow ribbon structure; one shows reduplication of the images of some chimneys as well as the flash, while another shows a bright flash and several dark ones. Of this last Mr. Robert Law, who took the negative at Melbourne, remarks that there were two flashes, the second reversing the image of the first.

METHODS OF CLOUD PHOTOGRAPHY.

The information at the disposal of your Committee does not, as yet, seem sufficient to enable them to pronounce definitely in favour of any one method as the best. They have made some progress in ascertaining the methods adopted abroad, and also in experimental work at home. The subject divides itself naturally into two sections, dealing respectively with cumulus or heavy clouds, and cirrus, or other light clouds.

Cumulus.—With all heavy clouds it is certain that admirable results may be obtained with a little practice in adjusting the stop and length of exposure. So far as the quality of the results obtainable is concerned, there does not seem to be any manifest advantage in the use of a coloured screen, of a black mirror, of specially slow or of orthochromatic plates. Nevertheless, it is quite certain that results of a given excellence are more easily obtained on a slow plate with a strong developer considerably restrained. It is equally certain that the use of the coloured screen, or of the black mirror, renders the process easier still.

With correct exposure and careful development it should not be necessary to resort to intensification of the image. If some such treatment should be required, inexperienced observers should be warned that in the use of mercurial formulæ it is well to keep the plate in constant movement while in the mercury bath, in order to avoid undue granulation of the image.

Cirrus.—Those who have made a special study of the photography of thin clouds appear to be agreed that in order to bring out all the details of their structure some special device must be adopted.

By extremely nice adjustment of the exposure and subsequent intensification of the image, very fair results can be sometimes obtained; but the process is difficult and only practicable in experienced hands.

Dr. Rizgenbach, who first described the black mirror device, recommends that exposure should be so arranged that the sky leaves practically no impression on the plate, while the thin image of the cloud must be brought out by means of Schlippe's salt (sulphantimoniate of soda).

M. Angot, in a report presented to the Meteorological Society of France, remarks that a black mirror is only advantageous when the cloud is about 90 degs. from the sun. In theory this is of course correct, but the Secretary to your Committee has found that there is a manifest practical advantage in its use for all parts of the sky, including even the immediate neighbourhood of the sun itself. M. Angot then goes on to say: The best results are obtained by coloured screens, yet the ordinary screens are insufficient. The following formula, due to M. Léon Vidal, gives every satisfaction. In a small glass trough with parallel faces there is placed a solution made with the proportions—sulphate of copper 175 grams, bichromate of potash 17 grams, sulphuric acid 2 cubic centimetres. These are dissolved in 100 to 500 cubic centimetres of water, according to the thickness of the trough and the results to be obtained. The sulphate of copper arrests the red rays, and the bichromate the blue and violet. The plates used were Lumière's orthochromatic, and the exposure from ·5 to ·8 second.

Your Committee regret that they have not yet received any illustrations of the results obtainable by the above means, but it is hoped that an exhaustive trial of the method may be carried out in the course of the coming year.

The Secretary to your Committee has continued the comparative trial of slow and ordinary plates with or without a black mirror. He reports that ordinary plates and direct exposure may often give satisfactory results when the background of sky is a clear deep blue. If, however, it is at all hazy the correct exposure becomes extremely difficult. With slow plates, however, such as Mawson and Swan's transparency plates or photo-mechanical plates, it is fairly easy to obtain results of high excellence.

With the black mirror ordinary plates give excellent results; but here again, unless the clouds are moving with unusual rapidity, or unless the light is very bad, there is a great advantage in the use of slow plates. It is, indeed, easy to obtain a fairly dense image of any cloud, however luminous and however thin, by the combined use of mirror and slow plate. Such means give abundant detail and full gradation of light and shade even when the sun is actually in the field of view. Exposure would vary from about ·2 to about ·8 second with an aperture $\frac{f}{11}$.

The developer used in all these experiments is the familiar formula with pyrogallol and sulphate of soda considerably restrained.

Special attention should be drawn to the admirable series of cloud studies presented to the Committee which were taken by Signor Mannucci at the Vatican Observatory under the direction of the Revd. Padre Denzya, S.J. These show what can be done by direct exposure, Signor Mannucci recommending a slow plate for the more difficult subjects. The pictures taken by the Secretary to your Committee in a similar manner show the value of the slow plate and black mirror.

MISCELLANEOUS PHOTOGRAPHS.

With regard to miscellaneous photographs of meteorological interest, your Committee regard with some satisfaction the number of pictures they have been able to secure which show the violence and severity with which the great blizzard of March, 1891, visited the south-west of England. They believe it is of great importance that fairly complete pictorial records should be kept of all such abnormal events.

They are also pleased to be able to report that several of the photographic periodicals have recently manifested considerable interest in the work, one paper, the "Practical Photographer," having just offered a series of prizes for the best meteorological studies, the editor having offered to present any competing pictures to your Committee. Several photographic societies are also taking the matter up, and your Committee hope that the effect of such powerful aid may rapidly make itself felt, both by increasing their collection and by adding to the number of contributors.

In order to show the widespread interest already taken in the subject, the catalogues of the three principal collections are appended.

In conclusion, your Committee ask to be re-appointed with a grant of £15, in order to follow up properly what they regard as a satisfactory start.

"**The Optical Magic Lantern Journal**," edited by J. Hay Taylor, and published at 56, Chancery Lane, E.C., appears this month about double the usual thickness, with some good practical articles by practical writers.

The Blackfriars Photographic and Sensitising Company have been appointed sole London agents for Messrs. Walter Griffiths and Co.'s detective, enlarging, and lantern-slide cameras. In view of the close approach of the lantern season, this firm intend also to specially cater for the same.

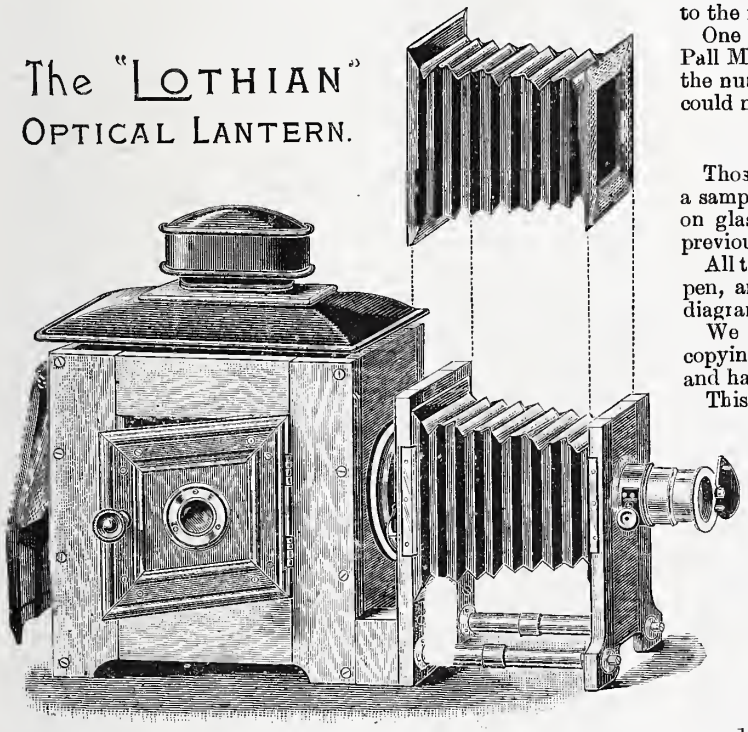
Apparatus.

ENGLAND'S FILM CARRIERS.

J. Desire England, of 21 to 24, Charles Street, Royal Crescent, Notting Hill, London, W., has sent us a sample of his aluminium-mounted film carriers, which are made of stout Willesden paper or black millboard with aluminium ends, which hold the ends of the film down, the sides being kept flat by the rebate of the dark slide. After practical trial of these we can strongly recommend them as efficient and cheap.

THE "LOTHIAN" OPTICAL LANTERN.

Mr. A. H. Baird, of 15, Lothian Street, Edinburgh, has introduced a new form of optical lantern as seen in the figure, which is adaptable either to oil or lime light. As will be seen from the illustration, it has a special bellows front, which has a range of from five to fourteen inches, thus enabling lenses of varying foci being used. This bellows front is removable, allowing the demonstration of any physical or other experiments. A special jacket



fitting is provided for the objective, so that any lens may be inserted without unscrewing. The whole strikes us as a well-thought-out and capable instrument, useful alike for lantern work of all kinds as well as enlarging.

THE B. W. AND CO. PHOTOGRAPHIC "TABLOIDS."

Messrs. Burroughs, Wellcome, and Co., of Snow Hill Buildings, E.C., have sent us samples of the above, which we have submitted to actual test. This firm is so well known for the quality of its medical "tabloids" that we need not comment on the excellence of their manufacture. That they are reliable and convenient we have proved by our trials, and they will be found very useful, not only for tourists but also for those who prefer to use dry pyro, and do not want the trouble of weighing out for each lot of developer.

Both quinol and pyro "talboids" may be obtained, and with the former liquor potassæ is suggested as the accelerator, and for pyro a special accelerator tabloid is prepared.

MAXOTINTS.

Mr. D. McNae, of 10, Markham Square, Chelsea, S.W., has submitted to our notice some coloured prints which he has given the above title. The preparation of the colours and surface of the prints to receive the same will be kept a secret, but the colours are all chemicals and applied hot to the print and may be obtained either transparent or opaque.

The results obtained by this process are really very natural, and one is almost led to believe that we have at last attained photography in colours. The great advantage of Mr. McNae's process is that there is no chance of altering the likeness in the case of a portrait. No dull marks are visible on the surface of the prints, and the surface of the prints may be rubbed, washed, or even burnished after colouring. The process is applicable either to portraits or landscapes, and the colours withstand enamelling and hot gelatine, and last but not least, the expense is considerably less than usual.

SWIFT'S LANTERN LENSES.

Messrs. J. Swift and Son, of 81, Tottenham Court Road, London, W., have sent us three of their "Paragon" lantern lenses for trial, of 5 in., 6 in., and 7 in. focus. The lenses are mounted in well-finished brass work, and are actuated by a rack and pinion, which works very smoothly.

Testing the lenses on a very severe subject, a photographic slide of a page of type, we found it reproduced absolutely sharp to the margins and no distortion.

One of Messrs. Swift's Paragon lantern lenses was also used at Pall Mall on Saturday last, when our Prize Slides and others to the number of 200 were shown, and the excellence of definition could not be excelled.

VITREOGRAPHINE.

Thos. Haddon, of 2, Maitland Street, Edinburgh, has sent us a sample of the above, which is an ink specially made to write on glass, and it answers this purpose perfectly, without any previous preparation, and without blotting or running.

All that is required is a perfectly clean bit of glass and a clean pen, and, after shaking the bottle well, it will be found that a diagram or sketch may be copied with the greatest of ease.

We have tried this, and prepared a set of lantern-slides by copying on cover glasses some diagrams from a work on optics, and have not found the slightest difficulty in using the same.

This ink will be found of very great value for all lecture purposes with the lantern, and may obviously be used to copy hymns, sketches, or any other subject. The ink may be had either in black, which gives a very good opaque colour, which shows up perfectly opaque on the screen, or it may be had in transparent colours.

Catalogues.

R. Lechner, 31, Graben, Wien.

This price list forms quite a handsome volume of over 100 pages, and contains a very complete list of all the leading apparatus for which this firm is famous.

Special cameras for photo-micrographic or photo-grammetric work are included, besides numerous well-known English and foreign articles. It is conveniently divided into several sections, which deal with the utensils necessary for the various operations.

Mr. Frank F. Weeks, 21, Thorpe Road, Forest Gate, London, E.

Mr. Weeks sends us his price list of optical lantern slides and special artistic sketches for the same. He has long been known for his artistic work, and is very successful in preparing designs of all popular and scientific subjects for lantern work.

We have frequently had queries asked us as to where to obtain artistic and floral border designs for hymns and mottoes, and these Mr. Weeks is prepared to supply to any amount.

G. W. Wilson and Co., 2, St. Swithin Street, Aberdeen.

Now that the lantern season is so near at hand, the catalogue of photographic lantern slides by this well-known firm will come in very handy. Messrs. Wilson's work is so well known for its artistic quality as to require no praise from us. Their sets of slides include most of the best known and most picturesque places both in England and Scotland.

Exhibitions.

SOCIETY.	ENTRIES CLOSE.	OPENS.	CLOSES	ADDRESS OF SECRETARY.
P.S.G.B.	—	Sept. 26	Nov. 10	The Assist. Sec., 5a, Pall Mall East
Bedford & Dis. Camera Club	Sept. 20	Oct. 11	Oct. 13	W. E. Ison, Hughenden, River Cres., Bedford
Stockport	—	Oct. 17	Oct. 23	B. S. Harlow, Buchan House, Heaton Norris, Stockport.
East London Photo. Soc. ...	Oct. 18	Oct. 24	Oct. 25	M. A. Wilkinson, 28, Shacklewell Lane, Kingsland
Todmorden Scientific Assoc.	—	Nov. 5	—	Jno. T. Binns, 3, Garden Terrace, Todmorden
Hackney Photo. Soc. ...	—	Nov. 15	Nov. 17	W. Fenton Jones, King Edward Road, Hackney
Leytonstone Camera Club...	Oct. 25	Nov. 10	Nov. 12	A. E Bailey, Rose Bank, South West Road, Leytonstone
Brixton	—	Nov. 17	Nov. 19	F. W. Levett, 74, Geneva Road, Brixton.
South London	—	Nov. 24	Nov. 26	Chas. H. Oakden, 51, Melbourne Grove, E. Dulwich
Exeter Amateur Photo Soc	—	Nov. 24	Nov. 26	Rev. J. W Sparshatt, Fairfield House, Alphington Road, Exeter

PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN.

THIRD NOTICE.

F. P. CEMBRANO again this year gives us a series of pictures marked by his strong individuallty. In other days he loved the full blaze of a southern sun, and we cannot readily forget the faultless *technique* of his Alhambra series. Evidently he is now fascinated with the gloom and mystery of late evening, and one at least of the pictures was taken after sunset. "The Western Sky" shows half-formed, dappled clouds, and the sun is dimly seen struggling to get through them. The dark hull and mast of a boat help immensely in giving point to the scene. Perhaps the best of the series is "An October Morning on the Thames." There is palpable mist on the river, and here and there a few figures stand out in sharp contrast against the prevailing grey. This well-known effect is frequently painted by French artists, for the Seine can match the Thames in supplying the material. There are few photographers, however, daring enough to attempt this *tour de force*, for the monochrome of the photograph still further increases the difficulty; the greater credit therefore to Mr. Cembrano, for his courage and efforts have been crowned by success. "The Couch-grass Digger," by L. C. Bennet, is a very effective picture, though the material is of the simplest—a figure bending to his work with foot on fork, and a rough furrowed foreground, but with a sky that puts all in harmony. "In the Vale of Keswick" there is ample material for the camera, and Mr. Leslie Selby has made the most of it. There are haycocks in the foreground, and though the middle distance is dark, the light on the squat tower of a church in the distance gives relief to the scene, and the distant mountains melt into the sky and complete the picture. "A Sunset on the Upper Rhine," and "The Boden See" are two pictures remarkable for their fine clouds rendered with unusual delicacy of detail, and yet they belong to the pictures and are not the result of double printing. There is perfect harmony, and one only regrets that they are spoiled by the framing, for the oak flat intensifies the very cold grey of the tone, and they are altogether overweighted by the frames. A lesson may be taken from Mr. Cembrano for the benefit of future exhibitions. G. W. Ramsay has shown artistic skill in his Thames picture. By cutting away an uninteresting mass of water, he has concentrated the interest, and the long proportions of his picture specially suit his subject. His "Sunset" is a very striking picture, and the contrast offered by the setting sun nearly touching the mast of a boat and the long reflections and shadows travelling side by side through the picture, must demand the attention of those interested in unusual sunset effects.

C. R. Whiting exhibits two very artistic pictures, both of which demand more than a passing glance. The one called "Early Morning, Hastings," is probably the most effective view of the older and more picturesque portion of this well-known health resort yet produced by photography. It is low water, and the boulders in the foreground which once formed the foundations of the pier that dated back to the time of Elizabeth, and long since swept away, furnish effective light and shade. There is an eager group on the beach some distance away, and probably the usual Dutch auction for the sale of fish is going on. The morning sun is behind a heavy cloud, and is drinking his way through its vapour, for there is a bar of bright sunlight away out to sea, and the fishing boats are dotted about, and give life and animation to the scene. In the other picture, called "Waiting for the Tide," some fishing boats are hard aground; but the welcome tide bespangled by the rays of the morning sun is rapidly advancing to their rescue. Both these pictures admirably illustrate the artistic uses of rough paper, for though the contrasts of light and shade are strong, there is complete absence of blackness in the shadows. W. R. Cassels has been very successful with his two landscapes taken in the land where the olive grows. Our knowledge of them is confined to well-bottled specimens of the fruit, but we were under the impression the foliage was very heavy. It is apparently spring, however, for there is light and sparkle on the foliage, but the photographic spottiness of shining leaves is absent for all that. Probably the rough paper has been here a useful aid to artistic effect.

J. Harold Roller has made his mark by his portraits taken in ordinary rooms. The first in order on the walls is larger than the others, and is an effective portrait of a lady reclining on a couch, whose profile comes dark against light. The pose is very easy and quite free from the conventionality of the studio, and the light and shade broad and effective. The tapestry background is perhaps just a little disturbing, but the treatment of the whole is very original. On another wall the same artist exhibits a frame of several pictures, all fresh in treatment, but there is one that stands out from the rest from its superior artistic merit, and it well deserves the medal it has gained. A lady, in light drapery, is reclining in a Voltaire chair of ample proportions, and one arm rests negligently on the side of the chair. A lead casement occupies the extreme left corner of the picture, and immediately beneath is a spider-legged table covered by prints, flowers, and *brie-a-brac*, some of which help to break the formality of the window. There is great delicacy of detail in all the lights, and though the picture is forcible in chiaroscuro, there are no black shadows anywhere. In another of the series, where a lady is engaged in removing a volume from an old-fashioned book-case, the pose of the hand on the book demands special notice.

A. R. Dresser has taken a medal for his view of Aylesford, and well deserves it, for it is one of the most effective landscapes in the Gallery. It is full of incident, for there is a river bank on which are gathered a group of boys, and there is a boat a short distance from the shore, whilst still further away are bridge, church, and houses. The clouds are soft and harmonious, and the picture full of atmosphere—so much so that it scarcely looks like a photograph. And a painter would say this is high praise indeed. This picture is so good that it is a pity Mr. Dresser sent the one near it called "Evening." It might be called "Night," for the clouds are so black and heavy on the side of the picture that the landscape seems crushed in by them. Indeed, there is a complete want of harmony, and, unfortunately, the same may be said of several others exhibited by this gentleman.

H. Yeo is a large exhibitor of portraits, mainly of children. His series called "Blowing Bubbles" shows a child engaged in this well-known infantine occupation; and the progress of this airy nothing, from its first creation from the breath of the child to its final extinction, has been well shown. A medal has been awarded to the series. There are twenty-five different exhibits sent in by this most indefatigable worker, and all exhibit ability of a very high order. Indeed, one rarely sees so much variety in the work of one man. A medal has been given to F. Muller for the head of a man of strong Jewish type. The face is rugged and white-bearded, and the eyes leer out from under bushy eyebrows. The head can scarcely be taken as a type of manly beauty, and the expression can hardly be called agreeable, but the texture of flesh is wonderfully rendered, and particularly noteworthy is the high light on greasy skin of the man's forehead. There is no retouching, and it is undoubtedly a striking picture. H. Little has produced a very fine enlargement from a technically faultless negative. Every detail of the decorations in the grand salon of the Vatican Library is marvellous in fidelity, and the picture is more agreeable to the eye than a print from a direct negative of the same proportions. The "Musselburgh Fish Wives" do credit to T. Scotton as well as to themselves. Stalwart and short-skirted, they seem proud of the strong individuality of their costume, and appear quite able to take care of themselves. The sitting figure of the old woman is most natural in pose, and the long coast line and wet sandy shore furnish the proper accompaniment to the whole. The "Story of a Cloud" is well given by Birt Acres in five acts, for in each photograph the potency of the wind is strikingly shown. In the first picture the cumulus cloud is complete in all its grandeur, but each succeeding one clearly indicates the rapid decrease in importance until the last scene, which shows the cloud shorn of its glory and torn into shreds.

In these latter days, when platinum, carbon, and gelatino-chloride are so much to the fore, it is interesting at least to have such a fine example of silver printing on albumenised paper before our eyes, and "A Grecian Girl," by W. J. Byrne, forcibly shows that old methods sometimes take some beating, and it must be conceded that for force, combined with delicacy, there is no known photographic process which could furnish a finer example than the one under

review. "Langdale Pikes from Blea Tarn" is a good solid landscape by R. J. Fry; and there is another of large dimensions by A. Kapteyn which is very harmonious. The clouds on close inspection show traces of manipulation, but their reflections are faintly given on the water in the most natural manner, and at a distance the effect is very artistic.

H. Stevens has been most successful with his animal studies, but the one he calls "Tired Out" is perhaps the most artistic. A complacent terrier has consented to become a cushion for the head of an equally complacent tabby cat. They are evidently very good friends, and the expression of complete contentment on the face of pussy is almost comic, and one can almost hear it purr. The "Pack of Beagles" is full of life, and the light in the eyes of the dogs and the long shadows indicate that the sun is low. It was well to announce that this picture is untouched, for the eyes absolutely sparkle. Both in these animal pictures and the studies of flowers there is the same faultless technique, and the medal is well earned. "In the Pool," by L. C. Bennet, is an example of bold chiaroscuro, which reminds one of the work of W. Whylie. Two steam colliers stand out black against a sun-lit sky, and the water is jewelled by the sparkle of the sun. One of the ships is getting up steam, for black smoke dims the brightness of the sky where it trails its sinuous course. The colour of the print is, however, scarcely well chosen, for the tint is too warm for the subject.

J. E. Austin, in his "Worn Out," has scored a big success, and the medal is well bestowed. A knowing clock doctor is peering into the well-worn works of a very old eight-day clock which have evidently reached the last stage of slow consumption, if one may judge by the puzzled hopeless expression on the face of the would-be healer. The pose is natural, and the accessories are of the simplest; and broad masses of light and shade in the background help to give effect to the figure. The texture and detail in the flesh of the sinewy arms, and also in the simple checked shirt, are so perfect that we may safely predict a run on spectacle lenses for photographic purpose during the next twelve months.

SOUTHSEA AMATEUR PHOTOGRAPHIC SOCIETY.

The annual exhibition of this society opened on the 10th inst., and must be pronounced a decided success. Entries numbered close on 200, and the work generally was characterised by the judges (Messrs. Alfieri, Symonds, and West) as of unusually even merit. This opinion was endorsed by the numerous visitors who patronised the exhibition. On Monday evening the competition slides were thrown on the screen by Mr. Arnaud, of Ryde, who kindly lent his own biunial lantern. Interspersed with music, this part of the exhibition appeared to be thoroughly appreciated, loud applause greeting the winning slides. The classification and awards were as follows:—

CLASS I, Landscapes. Thirty-one entries, and platinotype to the fore. Gold medal, Dr. Ticehurst, "The Old Home," a picture in every way. Silver medal, Major Bruno, "On the Test," and "A Summer's Day," which the judges considered of equal merit. Bronze medal, Dr. Ford, six well-selected views on the Thames. Hon. mention, R. Leventhorpe, "Seraglio, Corsica."

CLASS II., Seascapes. Six entries. Here again Dr. Ticehurst secures the gold medal for "Whitby Harbour." Second, Lieut. Cottingham, R.M.A., Yacht "Diamond."

CLASS III., Architecture. Thirty entries. Gold medal, Commander Gladstone, R.N., series of 12 by 10 interiors of Westminster Abbey, leaving little to be desired. Silver medal, Major Wilkinson, R.E., "Netley Abbey" (three), which are good technically and artistically.

CLASS IV., Figures or Genre Studies. Thirty-two entries and close competition. The President, Mr. Thornton, takes the gold medal for "A Young Boatman," which tells its story at a glance, and is full of motion. Silver medal, Mr. Sawyer, "A Sail in Sight," which we much admired. Bronze medal, Major Bruno, "A Crafty Lesson," previously honoured in an excursion competition.

CLASS V., Hand-Camera Work. Fifty prints. Gold medal, Dr. Newby. Silver medal, Major Bruno, "Six Southsea Scenes." In our opinion Mr. Hammond's exhibit should not have been passed over.

CLASS VI., Lantern-Slides. 144 entries. Gold medal, Commander Gladstone, R.N. Silver medal, Surgeon-Captain Winter. Bronze medal, Major Wilkinson, R.E. Specially commended, Major Bruno, "Sunset Effects."

CLASS VII., Enlargements. All prizes to Mr. Sawyer, who showed some fine subjects of general excellence.

SPECIALS. Two special prizes, kindly presented by Mr. G. Knight for general excellence in the work of members in the various sections. Medal, Commander Gladstone, R.N., architecture and lantern-slides. Medal, Major Bruno, landscapes, seascapes, genre studies, enlargements, and slides.

A varied display of the latest novelties in apparatus and processes was shown by Messrs. Rastrick and Co.

Societies' Meetings.

Accrington.—Ordinary monthly meeting held on 3rd inst. The President, Dr. Clayton, gave a demonstration on platinum printing (hot bath process) before a large audience, and the masterly way in which he handled the subject gave satisfaction to all present.

Belfast (Y.M.C.A Camera Club).—The usual monthly meeting was held on 10th inst., Mr. Wm. Swanston, F.G.S., President, in the chair. The prints in monthly competition were passed round for inspection. Mr. Alexander Tate, C.E., who kindly acted as judge, made the awards, as follows:—First, to F. A. Pollock, "Spring on the Lagan," a very fine whole-plate study, a large tree in the foreground with spreading branches almost covering the plate, through which the winding river could be seen to great advantage, every detail in the landscape being admirably brought out; second place to John Coates for a very artistic composition, entitled "In the Harvest Field," and third place to J. McCleery, for a half-plate study, entitled "Left by the Tide," a schooner stranded on the shore at Red Bay, co. Antrim; the remaining competitors all showing good work. Arrangements were made to have a plate-developing competition, ten of the members signifying their intention of entering, three plates having had various exposures (say under, normal, and over) to be handed to each competitor to develop (no intimation being given as to exposure or plates used), the results to be produced at a future meeting of the club. The lantern was afterwards brought into use, and slides passed through and tested.

Birmingham.—Ordinary meeting, Mr. A. J. Leeson in the chair. There was a large attendance of members. The minutes of the previous meeting were read and confirmed. The Assistant Secretary read a letter he had received from the President (Sir J. B. Stone), and which was a reply to the congratulatory resolution adopted at the meeting of the Society held August 23rd. Two new members were elected and one nominated for election. The Bynoe printing frame, which was sent by Messrs. R. and J. Beck, attracted a considerable amount of attention from the members present. Mr. E. Underwood was requested by the Chairman to deliver his paper on the manipulation of gelatino-chloride paper (which will appear next week). Mr. Underwood, in addition to his very able paper, gave a demonstration which was of a thoroughly practical nature. The squeegeeing of the prints on to ground glass, stripping them off, etc., was illustrated and explained in such a remarkably explicit manner as to call forth the admiration and thanks of the members present. In the discussion which followed, in addition to the Chairman (Mr. A. J. Leeson), Messrs. W. Jones, J. T. Mousley, J. H. Pickard, J. Simkin, E. Winn, and others took part. This being the first meeting held in the new club-room, the Chairman announced "that the meetings at the Midland Institute would be discontinued. In future the whole of the meetings (with the exception perhaps of one or two large lantern displays) would be held in the new room. The old club room, which is far too small for the requirements of the Society, will be used as a library and reading room. The fact of all the meetings being held in one place would, he was sure, still further increase the attendance of the members and add to the success of the Society."

Bolton.—The Bolton Photographic Society and Mr. Banks, optician, of Corporation Street, invited a large company to an exhibition of lantern slides on the 5th inst., as the opening night of the season. The company included the Rev. T. B. Johnstone, M.A., Dr. Johnston, Dr. Barr, Mr. Roscow, and other gentlemen who have attained a high degree of skill in the gentle and fascinating art of photography. Mr. Banks, who had charge of the lantern, exhibited a very large number of splendid slides by York, Valentine, and Wilson, of scenery in the sealing and whaling fishery grounds of the arctic circles, of a trip round the coast of the British Isles, and on the route of the Canadian Pacific Railway across the Rockies to Vancouver. This series was supplemented by some very fine slides by Mr. Roscow of scenery in Wales and the neighbourhood of Bolton. These views were greatly admired for their technique and sharpness, and judging by the scenes chosen this gentleman is to be credited with a high degree of perception for the picturesque. Dr. Barr also exhibited a number of views taken during a holiday in Holland and in the Ardennes, which also met with warm commendation. The whole display had the effect of demonstrating the wide variety of scene and artistic character which recent years' development in photography has conferred upon the lantern exhibition, and the pleasure which this method of entertainment has in store for those—and their number is legion—who delight in the pictorial. We understand that the photographic society has had a very good year, and their prospective exhibition of work next month will be anticipated with considerable local interest.

Brixton and Clapham.—The first open lantern night of the season was held on the 4th inst. The rain, which fell in torrents during the evening, somewhat spoilt the attendance, only seventeen members being present. Those, however, who had braved the ele-

ments were rewarded by seeing some very fine slides taken on a tour in the Scilly Isles and the Land's End by Messrs. H. and T. Bartrop and J. A. Butler, several of the sea pictures evoking great applause. Slides were also shown by Messrs. A. Howard and T. F. Buckle.

Chorley Polytechnic.—On 5th inst. the ordinary monthly meeting was held, the President, Mr. J. T. Brierley, in the chair. After the preliminary business had been disposed of, it was decided to have during the winter months a series of demonstrations, lantern exhibitions, etc. It was also decided to have a society's album, and that each member of the society will be expected to contribute his share of prints with a note as to plate, exposure, development, paper used, etc., also Wednesday evening in each week was fixed upon as the special time when members would be expected to meet together for exchange of ideas, social chat, etc. After a very pleasant and free conversation as to the merits and otherwise of various plates and paper and their treatment, the meeting was adjourned.

Croydon (Micro. and Nat. Hist. Club).—An ordinary meeting of the photographic section was held on the 7th inst., Mr. Jno. Weir-Brown in the chair, the subject being hand-cameras and any apparatus which they (the members) may have used, and report on the merits or defects as shown in practice. The Chairman called attention to the Club soiree being held as usual on November 23rd, and, being the twenty-third annual soiree, it was hoped that members would get forward their work so that the committee would be able to display and hang it to the best advantage. Mr. W. Low Sarjeant was undertaking the management of the photographic section of the soiree, so that any information required could be obtained from him. Messrs. J. and R. Beck's representative then kindly exhibited and demonstrated the use of their new "Frena" hand-camera for films, taking 3¼ by 3¼, weighing complete 3 lb. Mr. Tottem, Messrs. G. Houghton's representative, also kindly showed the working and uses of the "Shuttle" hand-camera, which was adapted for plates and films, the quarter-plate weighing 4¼ lb. with plates and 3 lb. with films. Mr. Low Sarjeant also exhibited two hand-cameras. Messrs. Waller and Carter and several other members showed hand-cameras.

Eastbourne.—Ordinary meeting, held on the 5th inst. Present:—Rev. A. G. Jameson in the chair, Drs. MacQueen, Habgood, Gabbett, Colgate, Messrs. Fox, Watkins, P. Simpson, Thomson, Hollway, Rodda, Sparrow, East, Strange, the Secretary E. Burnham, and about twenty others. Seven new members elected, one new member proposed. A demonstration on "Flash Light Photography" was then given by Mr. J. B. Flatman, who in a very able manner described the various lamps, reflectors, powders, etc., etc., which he used in the lecture. One or two photos were taken of the members during the evening by the Secretary and Mr. Bird, by flash-light, and a very instructive evening was passed. A card of events has been compiled, and up till the end of next April there are only three dates vacant.

Great Yarmouth (Camera Club).—The annual meeting was held on the 4th inst. for the election of officers. The Secretary stated that during the year many meetings had been held, at which discussions on photographic subjects had taken place, and some very interesting demonstrations given by members. The summer outings had also been very successful, except one, when it was so wet that only three members attended. Among the places visited were Leiston Abbey, Suffolk, where several fine views of the old ruins were obtained, and Ranworth, which were most successful days. The members who visited the latter place will remember with much pleasure the kindness of their host, "Farmer Kerrison." A letter was read from the President, Mr. F. Danby Palmer, D.L., stating that absence from Yarmouth prevented him being present. He, however, wished to express his thanks to the members and officers for their kindness and consideration during his year of office. The following gentlemen were then elected for the ensuing twelve months:—President, Dr. Adcock; Treasurer, Mr. John Taylor; Hon. Secretary, Mr. H. Harvey George. Committee: Col. Shuttleworth, R.A., Messrs. P. Wiltshire and Alfred Price. A hearty vote of thanks was passed to Mr. H. J. Blyth for having kindly lent his wherry to the members for a week's outing on the Norfolk Broads, when a most enjoyable time was spent and many fine pictures taken. It was arranged that at the next meeting each member should be invited to bring an exposed quarter-plate, and that all the plates should be developed at once by Mr. A. Price, who kindly volunteered to do so. The Secretary reported that several fixtures had already been made for the winter season, and that there is every prospect of a pleasant and profitable winter. It was also proposed that during the winter a public meeting of the members and their friends should be held at the town hall.

Hackney.—The weekly meeting held on the 4th inst. was an open night. Mr. Beckett presided. The Hon. Sec. announced that Sir Albert Rollitt, who is an amateur photographer, had consented to open the exhibition on the 15th of November next, at the Morley Hall. Work was shown by Messrs. Roofe, Wire, Dadd, etc. A discussion on hand-cameras was taken up. The Chairman thought more care should be used in the selection of a picture. The Hon. Sec. said that dust was more prevented when dark slides were used, and preferred their use to magazine kind. Mr. Gosling preferred magazine if it worked. The risible faculties of the members were tickled at this, many of whom doubtless had tried a magazine camera. Mr. Gosling went on to say he thought dust could be prevented causing damage to a great extent by painting the inside of the camera with glycerine. The Chairman said that sky printing was more neglected than it should be. Mr. Barker said he used a solution of bromide of potassium, applying it to the sky to prevent the action of developer there. Mr. Hudson then showed some prints on Collodine, a new printing-out paper not yet on the market. It was claimed that a print could be toned, fixed, and washed in hot water, and mounted (with permanence) in ten minutes. Mr. Pollard asked if solution of chloro-platinite would keep. Mr. Sodean said it would. The Chairman thought a good way to use amidol would be dry, as it is very soluble.

Holborn Camera Club.—On the 7th inst., Mr. E. H. Bayston in the chair, Mr. J. H. Avery demonstrated to the members present the working of the Platinotype Company's new cold-bath process. He hoped to show that platinum printing by this method was one of the simplest of printing processes, and that the ordinary worker with but little spare time and limited space and appliances at his command could work this process with advantage. In his opinion, while the results were far away in advance of most other printing processes, it was at the same time much more easy and pleasant to work. After further comparing platinum paper with other papers, he went on to speak of the working of the new paper, which he characterised as simplicity itself. No hypo baths required, no tedious washing, and they could develop the prints in their ordinary room by either weak daylight or gaslight. Mr. Avery thought the price had stopped the use of platinotype paper amongst some amateurs. Many thought it excessive, but if they took into consideration the superior results, and the small quantity of waste prints they had, he thought they would find it just as cheap as any other paper. Mr. Avery then went on to give various points in favour of the new cold-bath process over the hot-bath process. He developed a number of prints by this new process, and the use and simplicity with which the paper could be worked commended itself to all present. On Saturday last the final outing of the year took place at Westminster Abbey and the Houses of Parliament, finishing the evening with a tea and smoking concert at the club's head-quarters.

Kensington and Bayswater.—A meeting was held on the 10th inst. Mr. J. E. Hodd presided, and nineteen other gentlemen were present. New and amended rules were adopted The following gentlemen were elected officers for the coming year:—President, The Hon. L. M. Sinclair; Hon. Treasurer, Mr. F. A. Hahn; Hon. Secretary, Mr. C. W. Brumwell (address, 7, Lower Terrace, Notting Hill, W.) Council, Messrs. Burswell, Frogbrook, Hannaford, J. E. and R. A. Hodd, and Mote. The funds of the society were shown to be in a very satisfactory condition, and the "photographic" year is started with every prospect of success. Gentlemen wishing to join are invited to communicate with the Secretary. The subscription is 10s. per annum.

Lewes.—Owing to the wretched weather the meeting on the 4th inst. was only thinly attended. It was announced that the certificate for the quarterly competition was taken by Mr. G. J. Wightman with a very artistic landscape in platinotype. Mr. Tunks gave an interesting demonstration of lantern-slide making, developing with amidol, and Mr. Wightman developed some with hydrokinone.

Lewisham.—On the 7th inst. Mr. Alf. H. Miles, Vice-President, in the chair, Mr. J. G. Squire gaves "Notes on Development," which led to a very animated discussion, the new developer "Amidol" forming the chief topic. Mr. Squire passed round a negative, one half developed with pyro, the other amidol, the latter comparing very favourably with our dirty old friend pyro. The Secretary also showed a number of lantern slides developed with amidol, and Mr. Davidson gave a few more particulars of his formula published in the AMATEUR PHOTOGRAPHER of the 7th inst. The Secretary passed round one of Shew's Guinea cameras (of similar style to their Eclipse), fitted with three excellent machine-made double slides, lens, shutter, and finder. He also showed some prints taken with it, proving the lens was pretty fair considering the price.

Liverpool (Central Y.M.C.A. Camera Club).—The annual meeting was held on the 28th ult., when Wm. P. Christian, Esq., was unanimously re-elected President, and the officers of the past year were also re-elected. The President announced his intention of offering a series of monthly prizes to be competed for by the members, the subjects and conditions to be arranged by the officers. Mr. J. Fowler Shone also offered a prize to the member, non-prize winner, who gained the highest number of marks throughout the competitions. The first meeting of the winter session was held last evening, when Mr. J. Gardner gave a demonstration of flash-light photo-

graphy. Mr. Gardner's remarks were followed with much interest, and several flash-light pictures were taken during the evening. Mr. Jno. C. Lee occupied the chair. The meetings will be continued every Wednesday evening, and papers of a photographic or literary interest will be given each evening, when friends interested are invited to be present. A syllabus may be obtained at the Y.M.C.A. in Mount Pleasant, or will be forwarded on application to the Secretaries.

Midland (Camera Club).—Annual general meeting on 7th inst., the President, Dr. Hall Edwards, in the chair. The annual report showed that during the year fourteen general meetings had been held, with an average attendance of twenty-eight. The silver medal for the best excursion picture was awarded by the judge (Mr. F. P. Cembrano, jun.), to the late Hon. Secretary, Mr. Walter D. Welford, for a shot in the Frena hand-camera. The present strength of the club is seventy-eight. The Council regretted that owing to pressure of work Mr. Welford would be unable to continue as Hon. Secretary. The Hon. Treasurer's statement showed a small balance to the good. Commenting upon these reports, the President considered that though they might perhaps have done more, yet the work of the first year was eminently satisfactory. There were always difficulties in working a new club, members not knowing each other, a lack of interest, etc., but he considered they had gone along very well. The average attendance of twenty-eight out of seventy members was good, and he instanced a meeting of a medical society the night before, and an annual meeting, too, 300 strong in membership, with an attendance of only ten. Referring to the new rooms, he thought the members would agree that their club-room upstairs was extremely comfortable and convenient of access, whilst the library in which they were then seated, and which would be used for all large meetings, lantern shows, etc., was one of the most comfortable rooms in Birmingham. Considering the loss occasioned by the removal of the club-room, and the preliminary expenses of the club, the Treasurer's balance-sheet was quite as good as could be possibly expected. The following officers were then elected for 1892-3 :—President, Dr. Hall Edwards (re-elected); Vice-President, Rev. J. Henry (re-elected); Hon. Treasurer, Sam G. Mason; Hon. Secretaries, C. Jervis Fowler and Frank H. Mason; Librarian, R. J. Bailey; Council, Mrs. Welford, R. J. Bailey, Frederick Iles, H. R. Leech, M.R.C S., and H. Roland White. At the end of the meeting sample packets of the Paget Prize plates were distributed for trial, and the framed enlargement kindly presented to the club by the Paget Prize Plate Company was exhibited. Mr. Welford showed and explained the Frena hand-camera, together with negatives and prints taken on a reeent bicycle trip to Stratford. The simplicity and ingenuity were much admired.

North London.—On the 4th inst., Mr. R. Tanner in the chair. This being the first optical lantern night of the season, slides were exhibited by various members, some especially being of a very high order of merit. Among the slides shown were some exceedingly rapid hand-camera shots, taken by the Frena camera. Being so early in the season, the quantity of work was not large, many members having hardly begun slide printing yet. Next meeting, October 18th, technical night, and nomination of council and officers for the annual meeting on November 1st.

Oxford.—The annual meeting was held on the 4th inst. the President (Mr. E. A. Ryman-Hall) in the chair. The report of the committee was read. This showed that sixteen members had been elected, and the loss was four. Nineteen ordinary and seven outdoor meetings were arranged. The exhibitions of lantern slides were well attended, there being from 70 to 300 present. The Society was affiliated to the Photographic Society of Great Britain, and the committee recommended that this be continued. The Treasurer read his balance-sheet. The rules were then amended. In future the ordinary meetings will be on the first Tuesday only in each month, and the conversational meetings on the third Thursday in each month. The officers and committee were then elected. President, Mr. E. A. Ryman-Hall; Vice-Presidents, Mr. C. C. Cole, Mr. W. W. Fisher, M.A., Corpus College, Mr. A. F. Kerry, M.A., Exeter College, Mr. Councillor J. H. Salter; Hon. Treasurer, Mr. R. A. R. Bennett, M.A., Magdalen College, and Walton Manor Lodge; Hon. Secs., F. A. Bellamy, F.R.Met.Soc., 4, St. John's Road, Oxford, and H. Minn, 104, Walton Street, Oxford; official address, 136, High Street; committee, Mr. C. A. Jenkins, F.R.A.S., Mr. J. E. Foort, G. W. Norton, W. J. King, N. G. French, G. Smith, A. Robinson. The usual votes of thanks were given, as well as to the Paget Prize Plate Company, the Eastman Company, and the Editors of the AMATEUR PHOTOGRAPHER and the *Practical Photographer* for presents to the Society.

Putney Phot. Soc.—The first ordinary meeting of the winter session was held on the 3rd inst., Dr. J. F. Farrar in the chair. The following five gentlemen were unanimously elected members, viz., Messrs. Beatie, Blake, Noble, Ward, and Woolnough. The meeting was of a social nature, its object being chiefly to enable members to compare experiences and exchange ideas on the work done during the summer session, the result being a useful discussion of a variety of subjects. Mr. Gorin showed negatives on the Sandell plate, taken under very varying circumstances, with uniformly good results; he also showed the effect caused by interleaving exposed plates with the paper usually sold for this purpose; the image of the sheets were imprinted on the negatives, of course with disastrous consequences. It was generally agreed that it was best to pack exposed plates film to film direct, and to jamb them tightly in the boxes, so as to prevent play in any direction. Mr. Poole said that in his hands spirits of turpentine, applied with a soft rag, formed an efficient and convenient reducer of dense negatives, lantern-slides, and opals, for local or general treatment; he stated that it had advantages over methylated spirits similarly applied. Mr. Zachariasen showed a number of prints illustrating a series of experiments carried out by him to ascertain the effects of varying treatment of gelatino-chloride papers; the prints showed the difference between thorough washing and merely rinsing, between a strong and a weak fixing-bath, between acid and alkaline fixing-baths, etc. Three brands of paper were each toned in five different toning baths. The results of altogether 120 different experiments were shown, the characteristics of each paper, bath, and detail of manipulation were pointed out and summarised. He also described some experiments undertaken to find a suitable developer for snap-shots taken on a recent tour in Norway, and which all suffered to some extent from under-exposure. After the pyro formula sent out with the plates, he tried Rodinal, eikonogen, hydrokinone, and Amidol singly or combined, as advocated by the champions of each, all, however, with more or less unsatisfactory results. He then reverted to pyro and ammonia, but made up in the following proportions, viz., pyro, 4 gr.; bromide of potassium, 1 gr.; ammonia (·880), 3 minims to the ounce of developer, to which was added two minims when the image was fairly up. This developer worked very satisfactorily, and was finally adopted, the results being above expectations. This was confirmed by the experience of Mr. Gorin, who had used it for snap-shots taken on Edwards' instantaneous Isochromatic plates, on his recent tour in Morocco. Mr. Zachariasen's negatives were taken on Paget's fifty-times plates, the favourable opinion of which was confirmed by Mr. Blake. Messrs. Beck's Bynoe printing frames were exhibited in various sizes, and were favourably commented upon by members who have had them in use for some time. The discussion was general, and altogether an instructive and pleasant evening was passed.

Rotherham.—The annual meeting was held on 4th inst., Dr. F. B. J. Baldwin (President) in the chair. The Hon. Secretary presented the third annual report of the Council, who were of opinion that the society had shown unmistakable signs of progress. The membership had increased, the class of work done had improved in quality, and there had been a better attendance at the monthly meetings. The average number of members present each month was fifteen. Then followed a *resumé* of the year's business. The excursions had been four in number, namely, Conisbro' and Sprotbro', Haddon Hall, Rivelin Valley and Wyming Brook, and Wingfield Manor. The event of the year was the exhibition in St. George's Hall on the 23rd and 24th February, and a most gratifying success rewarded the efforts put forth. The very friendly relations with the Sheffield Photographic Society had been maintained, and several of its members sent pictures for exhibition. The Council realised the help its near neighbour could render, and consider that a general scheme of federation for the district at no very distant date might prove of mutual benefit. In conclusion the Council urged members to manifest an increased interest in the work of the society, and believed that with a little energy it was possible to attain to much higher things than had yet been accomplished, and to make the organisation in every way representative of the district, which has a population of 60,000 inhabitants. The report and balance-sheet (showing a small sum in hand) were approved. Officers were appointed as follows :—President, Dr. F. B. J. Baldwin; Vice-Presidents, Messrs. E. Isle Hubbard, W. H. Haywood, and G. T. M. Rackstraw; Treasurer, Mr. J. Leadbeater; Hon. Secretary, Mr. H. C. Hemmingway; Council, Messrs. I. Wright, W. H. Shephard, W. Mason, J. W. Whittington, and A. B. Clarke (Rawmarsh). It was announced that the programme for the coming season included the holding of an exhibition. Lantern slides were afterwards exhibited. They had been made by Dr. Baldwin (President), Mr. E. Isle Hubbard, and Mr. G. T. M. Rackstraw (Vice-Presidents), Mr. W. Mason, Mr. J. Clarke, and Mr. Hemmingway (Secretary).

Sheffield (Phot. Soc.).—The annual meeting was held on 4th inst., Mr. B. J. Taylor in the chair. After the election of a new member, the Treasurer presented his report, showing a substantial balance in hand, which was considered satisfactory and duly passed. The Secretary gave his general report of the proceedings for the year, showing there had been four resignations and eight new members, and that the society had more members on its books than in previous years; that the society was altogether in a prosperous condition, and that the proceedings throughout the year had been characterised by each member being anxious to promote the general good of the

association. The excursions had received considerable attention and support, and had produced some splendid work. The Secretary also announced several important fixtures for the ensuing year. The officers for the coming year were elected as follows:—President, Mr. B. J. Taylor (elected for the fourth time); Vice-Presidents, Messrs. G. Bromley, T. Firth, and E. J. Chesterman; Council, Messrs. W. T. Furniss, J. Smith, T. G. Hibbert, W. M. Toplis, and E. Sampson; Treasurer, Mr. Bradley Nowill; Secretary, Mr. E. Beck; Reporter, Mr. E. H. Pearce. After a vote of thanks to the retiring officers, the members taking part in the photographic exchange produced their pictures for division, there being altogether nearly 300 prints.

South London.—On the 3rd inst. ordinary meeting, the President, Mr. F. Edwards, in the chair. It was announced the President intended to offer a prize for the best picture taken on Barnet plates, samples of which, by the courtesy of the makers, were distributed, the results to be judged on the 7th November. Some experiences of developing with Amidol were given. It was found that the developer became inert and colourless if metabisulphite was substituted for sulphite of soda. One member found that used with hydroquinone it produced fog, while another member mixed pyro with success. The further discussion of the subject was deferred to the next meeting. The proceedings terminated with a social entertainment.

Sydenham.—An ordinary meeting was held on the 4th inst., the President in the chair. A demonstration was given by the Platinotype Company of platinum printing with their new lamp. Several negatives were printed from, which if they had been printed in bright summer sunlight would have taken at least twenty minutes, but by this lamp scarcely took more than as many seconds, forty grains of magnesium powder only being burnt in the oxy-hydrogen lamp. All the exposures were very correct, and the result pleasing. Mr. W. H. Smith, the demonstrator of the lamp, explained the various parts of the lamp. He also stated that the cost of printing each print amounted to about one halfpenny. Members were advised that the annual exhibition will be held this year on the 2nd and 3rd of November at the Vestry Hall, Anerley Road, and that all slides intended for exhibition must be sent in by Tuesday, 18th inst.

West Surrey.—On the 5th inst. the members held the opening meeting of their winter session. The President, Lieut.-Col. J. Gale, occupied the chair, and the Vice-Presidents, Messrs. Geo. Davison, Lyell, and Winsford, and a large number of members were in attendance. The President gave a short address, in which alluding to the work of the society, he drew an interesting parallel between the influence of photography and books. Referring to a recent address of Sir John Lubbock, Col. Gale showed that most of the claims made for books in regard to mental education as well as amusement could be extended to photographs. The subject of the evening was an address by Mr. Davison, touching upon a few practical points in regard to photographic apparatus used with an artistic purpose. This address proved a treat to all those present, the experience of such a worker as Mr. Davison proving invaluable in various ways. Subsequently a few novelties in apparatus were shown and described to the meeting. These included several pieces of apparatus kindly lent by Messrs. Beck, including the Frena hand-camera, and the Bynoe printing frame, also a new hand-camera about to be introduced by Messrs. Hinton and Co., the aluminium blind shutter, and the changing back of Messrs. Newman and Guardia, and a new hand-camera make by Mr. Hawkins.

West Kent.—The annual general meeting was held on the 7th, inst., the President, Mr. Andrew Pringle, in the chair. The minutes of the previous meeting having been read and passed, the officers for the ensuing year were elected—Mr. A. Pringle, President; Mr. A. R. Dresser, Vice-President; Mr. E. Hawkins, Hon. Sec. and Treasurer; and for the Council, Messrs. Jones, Court, Taylor, Nash, Clarke, Wiseman, Grant, and Pickell. The accounts for the last year, audited by Messrs. Clark and Wiseman, were then presented to the President and showed a substantial balance. A discussion then arose as to what should be done with the latter, as it was not thought necessary that the society should go on accumulating funds in this manner. It was proposed by Mr. Clark, and seconded by the Hon. Sec., that a soiree and exhibition of members' work with lantern now should be given—carried unanimously. Proposed by Mr. Clark, and seconded by Mr. Pickell, that it should be held in the Sidcup Public Hall in the first week in December. A Committee was then appointed of Messrs. Pringle, Hawkins, Pickell, Taylor, and Clark to carry out necessary arrangements and report at next meeting. An animated discussion then ensued on the various qualities of the Sandell dry plates and developing the same. Samples of Paget plates and instructions for use of same were handed round.

Wolverhampton.—One of the largest meetings for a considerable time past assembled on Tuesday, 4th inst. Mr. Holcroft presided, and among the rest of the members present were Councillor T. Ironmonger, Mr. C. T. Mander, Mr. German, Mr. Lord, Mr. J. W. Evans, and Mr. Ratcliffe, etc. Mr. J. Gale, one of the Hon. Secs. of the Society, gave an excellent paper on "Ammonia Nitrate of Silver Printing on Rough Paper." After dealing with the method of salting the paper, he proceeded to the more essential part of sensitising, printing, and toning it, and in order to show what artistic results the process is capable of producing, Mr. Gale exhibited a number of prints from negatives made during a summer tour, the tones of which ranged from a delicate sepia brown to a rich purple. Two very fine studies, one of Buildwas Abbey on the Severn, and also one of Ludlow Castle, were especially admired, and the marked superiority over prints with a highly glazed surface was freely commented upon. The paper contributed met with the hearty approval of those present. A number of small prints were handed round by Messrs. J. Stokes and F. W. Hall.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5833. **Photo-Zincography.**—Can any of your readers tell me of a work on photo-zincography, or any means of transferring photographs to zinc plates such as are now so much in use in newspapers?—NEWSMAN.

5834. **Accidental Exposure.**—The other day I took a photograph of the interior of a fairly well-lighted room, using extra rapid Ilford plate, and giving two minutes' exposure. When I had finished, through carelessness I accidentally drew up the slide of the double-back about half way, holding it at the time in my hand and well exposed to the light. I afterwards developed it, and, to my surprise, the negative came out all right, though I had expected it to be spoilt. Can anyone tell me why it was not spoilt?—O. C.

5835. **Enlarging.**—I wish to enlarge by the use of two cameras—putting the negative in small one against the window, and bromide paper or plate for transparency in the dark slide of the larger camera. Will any of your readers tell me where I shall find *full* directions for doing this, focusing, etc.?—C.

5836. **Dresden.**—Can any reader tell me if Ilford plates and ordinary chemicals are obtainable in Dresden, and also if there is a dark-room there for the use of amateurs?—TRAVELLER.

5837. **Dark-Slide.**—Does any reader know of dark-slides (double) which measure less than 5 by 4, for quarter-plates? Would he be good enough to tell me where I could get them?—FRA.

5838. **Carbon Enlargements.**—Will someone please tell me—(1) Whether carbon enlargements are easily made by an amateur; (2) how they are made, *i.e.*, a general idea of the process; (3) is the picture enlarged *direct* on to the paper, as with bromide paper; (4) where can I get the paper (ready for use); (5) is it easier or more difficult than bromide enlarging?—R. A. R. BENNETT.

5839. **Lens.**—(1) Could any kind reader tell me where the superiority lies of a portrait lens over a rapid rectilinear or an extra rapid? (2) If a rapid rectilinear working at *f*/5·65 be stopped down to *f*/8, would it give a sharper picture than a rapid rectilinear working at *f*/8 with full aperture?—FRA.

5840. **Toning.**—Can any of your readers kindly inform me how much gold is necessary for each chilling packet of Solio paper? Following the P.O.P. instructions, I have hitherto used 2 gr., and get thereby a very nice black tone something similar to a dark platinotype, but this does not suit all subjects, and I should like to vary the tone.—ANON.

5841. **Mounting Solio Prints.**—Perhaps some of your readers would feel interested in the following method of mounting Solio prints. I use Marion's mounting solution, and I find, in nine cases out of ten (with care), I succeed in mounting without spoiling of the glaze or troublesome squeegeeing. I suppose any ordinary gelatine mountant with spirit would act.—ANON.

5842. **Chadwick's Stereo Camera.**—I shall be much obliged for any answers to the following questions:—Has the above camera a double extension so as to permit the use of a single combination of an 8 in. R.R. for distant views, etc.? Would a pair of 4 in. lenses be too short a focus for all-round stereo work? Are there any agents in London where the camera may be seen?—THE SNIPE.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Sept. 30th.—No. 5822.
Oct. 7th.—Nos. 5827, 5828, 5831, 5832.

ANSWERS.

5821. **Moonlight Scenes.**—Blue sensitised paper, advertised in a contemporary by Albert E. Mallandain, 1 and 2, Poultry, Cheapside, London, E.C., might suit your purpose.—THE SNIPE.

5823 **Hydroquinone Developer for Lantern Slides.**—I have obtained excellent results with Thomtse's hydroquinone-potass developer, and I advise you to give it a trial. Any tone, from black to red, may be obtained.—THE SNIPE.

5825. **Local Reduction.**—Paint the dense portions over with a small camel's-hair brush dipped in a weak solution of perchloride of iron to which a drop or two of hydrochloric acid has been added (I don't use any particular strength, as I am guided by results). In a minute or two you will see the density is getting less. When it has *nearly* got to the required point of reduction, plunge the whole negative into water. After this, put it into a fixing bath of the usual strength, which reduces the part painted a little more, so be careful not to leave the iron solution on too long. If not enough reduced, go through the process again. Well wash, and dry. The process needs considerable care.—R. A. R. BENNETT.

5826. **Enlarging.**—I have made several successful enlargements with Lancaster's Instantograph by covering the window with some opaque substance,

and just leaving a square opening for the back of the camera, so that no light may enter the room except through the camera. The focussing is done on a sheet of white paper, supported on an easel in front of the camera. For the exposure, which is made on bromide paper (for big enlargements the rough surface is the best), a fixed time, of course, cannot be given, but it must be remembered that the more the image is enlarged the longer the exposure will have to be. Development can be effected with restrained ferrous oxalate or hydroquinone developers.—P. HARRISON.

5826. **Enlarging.**—Of course it is quite possible. You have to shut the light out of the room by a board in the window, in which a hole is cut slightly smaller than the negative, which is fixed in front of it. The camera is to be fixed on a shelf in front of the negative, with its lens pointing into the room, and an easel placed in front of it, on which the bromide paper is fixed to receive the picture. But it needs more details than can be given here. See Burton's "Modern Photography," or almost any guide-book.—R. A. R. BENNETT.

5829. **Writing on Prints.**—The following may be used after toning :—

Iodide of potassium	10 parts
Water	30 ,,
Iodine	1 part
Gum	1 ,,

Write with this on a dark portion of the print, when letters will soon become visible by the conversion of the image into iodide of silver, which will be dissolved by usual fixing bath.—INQUISITIVE.

5829. **Writing on Prints.**—The simplest method of accomplishing this without possessing any special skill or requiring special materials, is to write or draw the title, etc., on the paper before printing, using either Indian ink, or, better still, any opaque water colour (Indian red is specially suitable). The colour should be perfectly dry before printing, and will come off in the first washing water, leaving the writing pure white. Reversed writing on the negative that is sometimes advocated requires a considerable amount of practice, so that if many prints are wanted from one negative, with the same writing on each, it would be least trouble to print on the negative from reversed type, as in the "Name It" process.—H. W. B.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

TOBY.—(1) It is impossible to say what is the exact cause of your faded prints, it may be due to any one of the three causes you suggest; possibly the mounts are the worst offenders. (2) Gelatine mountant is about the best.

H. HALL.—Over-exposure is one cause of your trouble; but dilute your developer more, and add about 1 gr. of bromide of potassium to every ounce of mixed developer.

F. PARTRIDGE.—If you write to R. Field and Co., of Birmingham, the agents for Watkin's exposure meter, they will send you their little instruction book, which will tell you what you want to know.

THE JAY.—Mr. B. Gay Wilkinson's Exhibition prints are on the roughest sepia platinotype paper.

AMBROSE.—You want our candid opinion, you say. Please don't be offended when we say they are awful examples of what should not be done. (1) The path which is as white as snow cuts the print right in two; divide the print down the middle, and you will have two, either of which would be better than the whole. Evidently this was taken after a very heavy snowstorm, for the flowers on both sides are also snow. (2) Another wintry scene. Your road is almost worse than the path in No. 1, and if you wanted to print in clouds, oh, why did you let them leave off with a hard defined line which cuts off part of a chimney. You have been under-exposing and using a pyro developer; we should say pyro and soda, or else that *bete noir* hydroquinone. Both prints are as hard as brilliant, and as painful to the eyes as possible. The printing process you have chosen, and the mirror-like surface, all intensify this. Write and let us know exactly how you work, and send us some more prints, and we will try and help you.

J. N.—Cresco-Fylma may be used two or three or even more times, in fact until it gets so weak as not to act well. Immerse the plates properly in the solution, not merely float the film on the top.

M. EDWARDS.—You have heard possibly that there is nothing new under the sun, and your letter is an example of it. You have accidentally blundered on a fact which has been known for a very long time, and which forms the basis of nearly all collotype and photolitho grain. The result is decidedly effective, and you can repeat it *ad lib.* We have often amused ourselves by making this peculiar grain for such work as you were doing, and the higher the temperature of the water the coarser the grain.

ARTIST.—(1) One of the best methods of getting a sepia on bromide paper is to use

Platinum bichloride	15 gr.
Distilled water	70 oz.
Hydrochloric acid	1 oz.

Immerse the prints, which should have been previously soaked in water, for twenty minutes; and then rinse and soak the prints in solution of cupric chloride, wash and refix. It may also be obtained by a slight toning in uranium and ferridcyanide bath. Most of the sepia prints in the Pall Mall Exhibition are on sepia platinotype or gelatino-chloride paper toned with chloro-platinite of potash. (2) Bichloride of platinum will keep in solution.

A. JANE.—Thanks for notes, which will duly appear. The tones you have obtained are decidedly good.

A. MARSDEN.—(1) Flat and over-printed, sepia platinum rough surface. (2) Useless, we are afraid. (3) Good carbon or rough bromide. (4) Wants clouds, black platinotype, smooth. (5) Useless. (6) Good. Platinum or bromide. (7) Matt-surface chloride. (8) Wants clouds and bromide or platinum. (9) Cut an inch off foreground, rough sepia platinum. (10) Useless, we are afraid. Try it in bromide. (11) We have cut this print down to the right size—matt-surface chloride or platinotype. (12) Either matt-chloride or platinum in a warm colour. (13) Wants clouds and sepia platinum, rough. (14) Rather difficult to make anything of this, the foreground too ugly; try deep printing on rough bromide. (15) Good sepia or black platinotype. (16) Do. (17) Wants clouds and Mezzotype paper. (18) Just a shade of clouds and platinotype or Mezzotype. (19) Hopeless. (20) Cut down and platinotype. (21) Rather difficult, print much deeper on very rough paper, and give it some ridiculous term for a title, such as "staccato." "andante," or "arpeggio," and you will find some go into raptures over it. (22) Useless, from "mottling" (23) Platinum or gelatino-chloride. (24) Print on Mezzotype and don't vignette. (25) Chloride or platinotype. (26) Hopeless, we are afraid; wants clouds and rough paper to hide double outlines. (27) Good chloride paper only will do this justice. (28) Platinotype. (29) Mezzotype or platinotype rough. It is extremely difficult from such poor prints to say what can be made with careful printing.

G. RILEY.—It depends a great deal on the age of the lantern lens; some are now made which can be used for photographic work as well. The only way to tell is to try them in the camera. You will find that we have had a series of papers on the construction of all sorts of apparatus, which commenced on August 5th Always glad to help you.

A. JORDAN.—We should recommend No. 2 set fitted with an R.R. or Euryscope lens.

H. SALWAY.—Your fault lay in not washing the paper first. And we have found far better results from the hydroquinone than the pyro developer. The prints will tone in the separate baths, but very slowly, and not so well as in the combined bath.

F. G. WHITE.—The print you send is dreadfully flat and poor. We should say the negative wants intensifying. It is not very artistic.

E. L. THOMAS.—We are afraid that you will find printing on chloride paper by the electric light even slower than daylight. You would find in our issue of March 25, an article which describes how to cut down the time to about one third.

A. R. SPEAKMAN.—You will find article on studio building in Vol. x, Sept. 6, 1889, this is we think the one you refer to.

R. A. R. BENNETT.—The expert's opinion was that the markings were in no way the fault of the plate maker, but caused by soaking the plate in water first, and he made some markings just like them by air bubbles. It is not possible exeept with the solar camera or very powerful paper to enlarge on to carbon paper.

WASHER.—The probabilities are that you will find the zinc act on the prints. Replace the zinc by canvas or strained catgut and it would be alright.

R. E. LONG.—All prints and negatives sent for our criticism or advice are returned if postage is paid.

W. T. JONES.—The snap-shot you send is very good. It might be improved by being just a shade lighter in the left-hand corner and by the introduction of clouds.

OSCAR BADGE.—After having printed, wash your prints in four or five changes of water, allowing them to soak in each water, face downwards, keeping them moving; then having twelve hours previously mixed the following bath, place them in the same :—

Toning Bath.

Chloride of gold	1 gr.
Sodium bicarbonate	5 ,,
Sodium acetate	30 ,,
Distilled water	6 oz.

Keep them moving till on looking through them the reddish colour has nearly disappeared in the deepest shadows, then fix in hyposulphite of soda 3 oz., water 20 oz., bicarbonate of soda ½ oz., allow them to remain in this for fifteen minutes, then take out and wash we'l. Be careful to keep the fixing and toning baths separate. Keep one dish, which must be absolutely clean, for toning alone. Send us up some prints to see how you get on. Your procedure of development seems alright. If you like, send a negative or two up for us to see.

ONE IN A FIX.—The only way to copy your c. d. v. the same size is to fix a cone of tin or wood on to the front of your camera so that you can increase the distance between your lens and ground-glass. When it is desired to copy anything full size, the distance between the object and lens and lens and ground-glass must be just double the equivalent focus.

TRIX.—(1) Nos. 1 and 2 are up to standard. The rusty tone of No. 3 is due to under-exposure and too much bromide. A full exposure and a weak developer with very little bromide, or instead, the addition of 10 gr. of ferrocyanide of potash, will probably give you the tones you want. (2) Prints sent off Tuesday last. (3) It depends whether you have a square-fronted camera or not. If you have back numbers of AMATEUR PHOTOGRAPHER you will find some very complete articles in vols. 12 and 13.

TYNEMOUTH.—The size of plate makes no difference to the result of the competitions, and to the best of our recollection your work was up to standard. To find out the exposure required with different sized stops is not difficult. The rule is, square the *f/o* numbers. Thus, *f*/10 and *f*/11 ; $10 \times 10 = 100$; $11 \times 11 = 121$, therefore the exposure is as 100 : 121, or as 10 : 12. Therefore, if the exposure for a given subject, sea and sky for instance, as per Burton, be $\frac{1}{20}$ sec. for *f*/11, it will be as $12 : 10 :: \frac{1}{20} = \frac{1}{24}$ sec. for *f*/10. Entry form sent on.

J. WALKER.—The peculiar positive appearance is stated to be due to insufficient washing, and to formation of a white compound, possibly hydrargyrum ammoniatum. The remedy is said to be the application of mercuric bromide, but we have never tried it.

W. SHAW.—Use ½ oz. of accelerator No. 2 for every 6 grains of pyro. It has no prejudicial effect on the bronchial tubes. For a suitable restrainer a very small quantity of bromide of potash, about 1 grain to every 6 grains of pyro. We have no design for studio of two storeys. You will find a one-storey studio in AMATEUR PHOTOGRAPHER, September 6th, 1889, vol. x. H. P. Robinson's book, "The Studio and What to do in it." Price 2s. 6d., is the best work on the subject.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word ; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* **2½** *per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of* **3d.** *to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.**, *or a commission of* **2½ per cent.**, *upon the sale price of the apparatus.*

Background.—Exterior background (garden scene) flatted oils, 8 ft. by 90 in., condition new, price 12s. photograph for stamp.—William Hare, Photographer Sutton, Surrey.

Enlarging Apparatus.—Hume's Cantilever enlarging apparatus, 8¼ in. condensers, cost with lens £11 15s., perfect condition, no further use, cash £9 10s. —Defaye, David Place, Jersey.

Two lamps for enlarging, each 40 candle power, nearly new, 6s. 6d. each.—White, Poplar's, Sutton-on-Trent, Newark.

Flash-lamp.—Good repeating flash-lamp (Fry's), almost new, cost 10s. 6d., price 6s.—Camera, 11, Reverdy Road, Bermondsey.

Hand-Cameras, etc.—Kodak No. 1, in excellent order, with finder, price 2 guineas.—Murray, 93, Park Street, Grosvenor Square.

Lantern, etc.—Magic lantern (oil) for sale, 11s.; also model steam engine, works well, 5s.—Frank, 150, Och Street, Abingdon.

Lantern, mahogany body, brass front, 4 in. condensers, two front lenses, one a 5 in. double combina-

tion and other an 8 in. single achromatic with lengthening tube, good 3-wick lamp and chimney, also superior safety jet for limelight with necessary sliding tray and extra top, all packed in case, £3 10s.—Thomas, 11, Oakfield, Liverpool.

Lenses, etc.—Rapid rectilinears! French make, special value, 5 by 4, 5½ in. focus, 11s. 6d.; 7 hy 5, 7½ in. focus, 14s.; 9 hy 7, 11 in. focus, 20s., complete with hood, flange, cap, and set of Waterhouse stops, largest aperture *f*/8; three days trial allowed.—Dorey, Lester and Co., Kilburn, London.

Lens, French rapid rectilinear quarter-plate, Waterhouse stops, new, 21s.; deposit.—A. Wilkinson, 37, Botanic Road, Liverpool.

Splendid half-plate rapid rectilinear lens, iris diaphragms, 18s.—A., 8, Kenilworth Road, Willesden Lane, London.

Portrait lens by Cooke, London, 9 in. focus, diameter of lenses 2¼ in., price £1.—E. Lang, Stanley Avenue, St. John's, Ipswich.

Taylor and Hobson's half-plate rapid rectilinear, iris diaphragms, £2 10s.—M. Helliar, Dorset Villa, Yeovil.

Rollholder, etc.—For sale, Eastman rollholder, whole-plate, spool half full of film, in good order, 45s.—Geo. Ingall, 45, Derwent Road, Lancaster.

Sets.—7½ by 5 Watson's Premier camera, with turntable, four double backs, tripod stand, two bags, Ross' 8 in. P.S. lens, Thornton-Pickard shutter, etc., camera and lens mounted in aluminium, £24; new this spring.—Francke, St. Saviour's Road, Jersey.

Bargain! Studio camera, cabinet size, with legs, dark slide, printing frames, dishes, etc., lot £5 10s.; approval on deposit.—H. D. B., Albion Works, Salford, Manchester.

Half-plate camera, lens, three dark slides, tripod, and all accessories, complete, £5 10s., cost double, almost new.—Black, 112, Gower Street.

Lancaster's quarter-plate Le Merveilleux camera, with tripod, lens, and double dark slide, 14s., in good condition; strong whole-plate camera, with tripod, dark slide, and carriers, no lens, 10s., or exchange for good background on roller, interior preferred; press for raising portraits, with cushion and oval dials for cabinets and c.-d.-v., 13s.—C. Kaiser, 29, Emmett Street, Poplar.

McKellen's camera (7½ by 5), leather bellows, vertical forward and hackward swing, reversing back, side swing, folding swing front, turntable and legs, three double dark slides fitted with quarter-plate carriers, one Hare's (7½ hy 5) changing hox to hold 12 plates and slide for same, Dallmeyer's rapid rectilinear lens, and stops in morocco case, also Ross's No. 3 wide-angle symmetrical lens with rotating stops, new last June, Thornton-Pickard time and instantaneous shutter fitted with speed indicator, also Phantom drop shutter, two waterproof cases to hold camera slides and legs, all in first-class condition, cost £30, price £20.—F. Clifton, Mile End, Stockport.

Lancaster's quarter-plate special brass-bound camera, four slides, Optimus landscape lens, stand, hag, etc., new, never used.—5, Milton Grove, Stockport.

Hare's 5 hy 4 patent camera, three double slides, Eastman rollholder, leather case, folding stand, Dallmeyer's rapid rectilinear lens, Thornton shutter, £10, cost £18 10s., used twice.—26, Calthorpe Street, London.

Sundries.—Wanted to exchange Lancaster's washer for 24 negatives for one for 12, any good make; also good rapid rectilinear lens (print sent), price £1, or exchange for anything useful for enlarging or lantern work or canvas case, all half-plate.—Miss Mildred Frere, Lamas Hall, Norwich.

WANTED.

Cameras, etc.—Wanted, whole-plate camera, complete, Shew's preferred; exchange grand St. Bernard puppy.—F., care of Mr. Mathews, 156, Loveridge Road, Kilburn, N.W.

Wanted, quarter-plate or hand-camera in exchange for poultry.—Thomas Walker, Mossley.

Half camera, Watson's or similar make.—Gee, Connaught House, Sellwood Place, Brighton.

Wanted, quarter-plate Instantegraph, complete, about 30s.—Address, Marr, Richmond School, Yorkshire.

Cameras, Lenses, etc.—Half-plate modern camera, three double slides, Dallmeyer's or Ross's View lens, tripod stand.—Jones, Chemist, Penmaenmawr.

Exposure Meter, etc.—Watkins' exposure meter; reply, stating price.—Gee, Connaught House, Sellwood Place, Brighton.

Lenses, etc.—Wanted, Voightlander's 5 hy 4 euryscope lens.—B., 10, Eglantine Road, Earl Hill, Wandsworth.

Sets.—Wanted, half-plate camera, double extension, rectilinear lens, instantaneous shutter, tripod, slides, etc., good maker, good condition. Full particulars, with price, to H., 21, Berners Street, Leicester.

Wanted, good half-plate set, all movements, long extension, immediate, cheap. Particulars to Burrell, People's Palace, Mile End.

Wanted, 12 hy 10 camera, three slides, brass fixings, strong tripod, inner frames for all sizes down to half-plates, Ross' No. 3 cahinet portrait lens, and Ross' 18 in. portable symmetrical lens.—Address, terms, X., 7, Batoum Gardens, West Kensington.

Sundries.—Half or whole-plate roller required, cheap, good maker, no steel har arrangement.—No. 345, office of this paper, 1, Creed Lane, E.C.

Lanterns! Lanterns!! Lanterns!!! Slides! Slides!! Slides!!! The largest and most varied selection in the whole kingdom. Before selecting elsewhere, call and inspect the stock of the City Sale and Exchange, 51, Lime Street, Leadenhall Street, City, where we have no hesitation in saying you will find all that you require in this way. Lanterns for sale, lanterns lent on hire, lanterns sold on commission, or taken in exchange for other apparatus. Write for special supplemental lists, Manager, City Sale and Exchange, as above.

Bargains in Cameras and Sets.—Lancaster's whole-plate 1890 Instantograph, all latest movements, reversing hack, etc., Lancaster's lens, iris stops, shutter, three double slides, and folding stand, finest order, £5 10s.; Meagher's quarter-plate camera, wide-angle movement, reversing back, fitted Ross landscape lens, five double slides, solid leather case and folding stand, 75s.; Lancaster's quarter-plate 1889 Instantograph, finest order, all latest improvements, including camera, lens, iris stops, two double slides, stand and case, 37s. 6d.; half-plate camera, reversing back, and rapid rectilinear lens, works *f*/8, both by Dollond, Ludgate Hill, double slide and folding stand, as new, take £4 4s.; 12 by 10 camera, finest mahogany, double extension, leather bellows, wide-angle movement, rising and falling front, etc., double dark slide, as new, £5 5s.; 5 by 4 best quality camera, by Robinson, Regent Street, leather bellows, rising, falling, and cross front, wide-angle movement, three double slides, fine rapid rectilinear lens, by Rohinson; Newman's shutter and Eastman's ½-plate roll holder, quite new, £5 17s. 6d.; 7½ hy 5 long-focus camera, by Gotz, wide-angle movement, leather bellows, reversing back, rapid rectilinear lens, and folding stand, set complete, £5 15s.; half plate Underwood's Instanto wide-angle movement, double extension, fitted rapid rectilinear lens, slide, and folding stand, £3 17s. 6d.; half-plate camera, hy Houghton, all latest movements, grand article, fitted three double slides, rapid rectilinear lens, and double folding stand, £6 10s.; quarter-plate Lancaster's Merveilleux set complete, 15s. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Hand Cameras.—No. 3 Kodak, very finest order, new spool films, rapid rectilinear lens, etc., solid leather case, £5 7s. 6d.; Beck's Frena hand-camera, new packet films, latest pattern, £4 4s.; Swinden and Earp hand-camera, good as new, carries either 12 or 20 quarter-plates, Laverne R.R. lens, £4 17s. 6d.; hand-cameras by Collins, quarter-plate, covered in morocco, fitted 5 hy 4 Wray lens, iris stops, Thornton-Pickard time and instantaneous shutter, finder, direct focusser, patent changing box for 12 plates, Eastman's roll holder, and 6 double slides, quite new, £8 17s. 6d., cost double; Rouch Eureka quarter-plate, rapid rectilinear lens, blind shutter, 12 plates, in case, £3 17s. 6d.; Lancaster's quarter-plate, Omnigraph, as new, carries 6 plates, good lens, 16s. 6d.; Samuel's hand-camera, 9 hy 12 centimetre, rectilinear lens, time and instantaneous shutter in case, quite new, take 32s. 6d.; Luzo's hand-camera, Rohinson, Regent Street, quarter-plate R.R. lens, instantaneous shutter, carries 100 films, solid leather case, quite new, £4 17s. 6d.; Kodak, No. 4, size 5 by 4, new spool of films, warranted finest condition, in leather case, take £7 17s. 6d., cost £11 7s. 6d; Adams' Ideal hand-camera, twelve quarter-plates, finest rapid rectilinear lens, time and instantaneous shutter, as new, £5 15s.; Fallowfield's Facile, fitted rapid rectilinear lens, carries twelve quarter-plates, as new, £3 17s. 6d. Optimus magazine hand-camera, covered leather, carries 12 quarter-plates, finest Optimus rapid rectilinear lens, two finders, shutter, etc., as new, take £5 5s.; Talmer hand-camera, carries 12 plates, fine lens, two large finders, time and instantaneous shutters, as new, take 65s. All above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Lenses. — Pair stereoscopic wide-angle rectilinear, by Charterhouse Stores, rotating stops, 4 in. focus, 45s. pair; Swift 5 by 4 wide-angle rectilinear, 5 in. focus, rotating stops, 32s. 6d.; 5 hy 4 Wray rapid rectilinear lens, Waterhouse stops, as new, 35s.; Beck's 8 by 5 Autograph rapid rectilinear lens, iris stops, 9 in. focus, £3 12s. 6d., as new; Lancaster whole-plate wide-angle lens, rotating stops, best order, take 15s.; Dallmeyer portrait lens, c.d.v., grand definition, Waterhouse stops, finest order, 63s.; Fallowfield's portrait lens, rack focussing, Waterhouse stops, 21s.; Ross' No. 2, c. d. v., portrait lens, Waterhouse stops, rack and pinion, take £4 5s.; 7 hy 5 Optimus rapid rectilinear, Waterhouse stops, as new, 42s.; whole-plate Optimus rapid landscape lens, rotating stops, quite new, take 35s.; whole-plate Wray's landscape, Casket lenses, 5 in., 7½ in., and 10 in. focus, iris stops, quite new, take 70s.; Shew's c.d.v. portrait lens, Waterhouse stops, rack and pinion, as new, take 21s.; quarter-plate Optimus rapid rectilinear, by Perken, Son, and Rayment, Waterhouse stops, covers 5 hy 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.— On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

ENLARGING APPARATUS.—Hume's enlarging apparatus, 5 in. condenser, without objective, 61s.6d.; with 8 in. condenser, 122s. 6d., carriage paid.—Hume, 1, West College Street, Edinburgh.

IMPORTANT TO AMATEURS.—Negatives skilfully Retouched. Printed in silver, gelatino-chloride, etc., and Enlarged. Also Developing, Copying, etc.—Terms strictly moderate.—Address, Wilfred Emery, 21, South Street, Baker Street, W.

2 PRIZES—10s. and 5s.—for the best and next best Photographs from Nature, or Painting of Cows, Poultry, etc., suitable for "Dairy" show cards; the larger the negative the better. Those arriving early stand a chance of being exhibited at the "Dairy" Show at the Agricultural Hall next week. Proofs to be sent to Payton and Co., Ltd., Tower Hill Warehouse on or before October 16th.

NEW!!

EDWARDS'S PROTECTIVE VARNISH

FOR FILM NEGATIVES.

INSTRUCTIONS.—Pour the Varnish into a flat dish, soak the Film Negatives in it for two or three minutes, and hang them up to dry.

PREVENTS CURLING AND AFFORDS PERFECT PROTECTION.

Equally Useful for Negatives on Glass.

Eight-ounce Bottles, **1s.** Pints, **2s.** Post, 3d. and 6d. extra. Of all Dealers, or

B. J. EDWARDS & CO., HACKNEY, LONDON.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 420. Vol. XVI.] FRIDAY, OCTOBER 21, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc, from 10 till 1 o'clock.

Our Views.—Phot. Soc. Gt. Brit. Permanent Gallery—Royal Academy and Chantrey Bequest—Societies' Notes—Photographers' Benevolent Association—The P.B.A.—A New Power—Pall Mall and Dallmeyer's Lens—Camera Club and Van der Weyde's Photo. Corrector—Its Action—Optimus Competition—Our Next Week's Issue.

Chit-Chat.

Pictorial Photography at Charing Cross Road.

Letters.—P.S.G.B. Medals (Morrow)—Dark-room at Llandudno (Jeffreys)—Hand-Cameras (Bell)—Ferro-Prussiate as a Restrainer (Burnard)—Phot. Benevolent Assoc. (Ward)—An Appeal (N. H. S.)—Transparent Markings on Gelatine Plates (C. of A.)—The Amateur Photographer Lantern Slide Competition (McEwen, J. W. Wade, Moi-Meme)—The Photographer's Record (Elliott and Son).

Articles.—How to Make a Set of Photographic Apparatus (H. J. —The Manipulation of Chloride of Silver Gelatine Paper (Underwood)

Exhibitions.—Phot. Soc. Gt. Brit.—Port Elizabeth—Bedford and District—Stockport.

Affiliation of Photographic Societies.

Societies' Notes.

Societies' Meetings'. — Ashton — Birkenhead — Birmingham—Bolton — Burslem —Chiswick—Cromwell—Derby—Dewsbury——Durham—E. London—Edinburgh—Fairfield—Glasgow High School—Hackney—Halifax—Hereford—Holborn—Hove — Hull —Ireland—Isle of Thanet—Kensington and Bayswater—Leytonstone—N. Middlesex—Richmond.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months,	5s. 6d.	Twelve Months,		10s. 10d.
Postal Union	,, ,,	6s. 6d.	,, ,,		13s. 0d.
Out of Postal Union ..	,, ,,	7s. 9d.	,, ,,		15s. 3d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 41.—"Inland Scenery with and without Figures." Latest day, Oct. 24th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, November 11th.)

The P.S.G.B. are, we understand, about to take a step which will prove not only of very great value but also of great interest. It is proposed to make each year a selection from the pictures exhibited at the annual exhibition, so as to form a collection of works which shall show the progress made in the science and art from year to year.

It is, of course, a well-known fact that the Council of the Royal Academy purchase each year one or two pictures, statues, etc., through the Chantry Bequest, which selected pictures form a very valuable collection. Probably the P.S.G.B. Council will not have to purchase the pictures, as the honour of having a picture selected will be almost if not quite as high as the medals. The only point which will have to be observed is that the prints are in some permanent process.

We start this week a column devoted to Societies' Notes, in which we shall include all notices of exhibitions, reports, balance-sheets, etc., which may be of interest to members of the various societies and our readers in general.

Every one of our readers may help a good cause by purchasing tickets for the special lantern entertainment to be given at Pall Mall on November 4th in aid of the Photographers' Benevolent Association. Tickets may be had from most of the dealers, or from the Secretaries of the various London photographic societies, or from members of the Committee, viz., Messrs. H. D. Atkinson, 18, Stepney Causeway, E.; F. H. Berry, Leigh House, Lordship Lane, S.E.; W. Bedford, 326, Camden Road, N.; R. P. Drage, 95, Blenheim Crescent, W.; T. E. Freshwater, 3, Fleet Street, S.E.; G. T. Harris, Rose Villa, Bisham Gardens, Highgate; T. C. Hepworth, 45, St. Augustine's Road; F. W. Hindley, 146, Charing Cross Road, W.; H. R. Hume, 6, Allen Terrace, Kensington High Street; A. Mackie, 3, Upper Baker Street, E.; W. Parfitt, 18, Gatscombe Road, Tufnell Park, N.; J. S. Rolph, 93, Taunton Road, Lee Green; W. J. Tabrum, 7, Quality Court, Chancery Lane; and from the Hon. Sec., H. Snowden Ward, Memorial Hall, E.C. If any convenience to our readers, we shall be pleased to supply tickets also.

We do not hear very much of the P. B. A., but it does good work in a quiet way, and is deserving of the support of all amateurs. Many of us will not miss a small mite, and the P. B. A. will be very glad of it, and the Secretary is very energetic and very thankful.

EVIDENTLY we have a new power given us at last, if we may judge from the following extract from an electrical contemporary :—

"I have before me a fine photograph of Sackville Street, Dublin, taken under the electric light; and looking into it I am astonished to find what wonderful effects result from photographing by the electric light. The moon and stars are actually dotted all over the clouds, instead of being behind them as they usually are in this country."

This is quite new, we believe, and we must confess at present a little inexplicable—and should prove useful to astronomers.

AT Pall Mall one of the most striking, if if not the most striking, exhibits from a scientific point of view is the example of work done by Dallmeyer's Tele-photographic lens. And it is curious to note that at the Camera Club we have an example equally striking of another new advance which may be said to be somewhat akin.

BY means of an apparatus which Mr. H. Van der Weyde, the well-known portrait photographer of Regent Street, has devised, he has been able to correct the distortion produced by the lens. The distortion corrected is that of exaggerated size of objects which are near the lens. For instance, it is well known that if a foot is protruded much beyond the plane of the face it will be rendered larger out of all proportion to the rest of the body. By means of the new invention, which is called the "Photo Corrector," this defect in a negative may be corrected, and without any other part of the picture suffering.

MOST of our readers will recall "The Misses Dene," a very fine group exhibited by Mr. Van der Weyde at Pall Mall last year, and which was reproduced in "Photographs of the Year." In this group the heads and hands of the charming quartette are rather too large, though at first sight one does not notice this. The improved picture which is now on show at the Camera Club, at once shows us that this is so, however.

ANOTHER, and possibly a still more striking, example is in the figure of a young lady seated in a chair with her hands nursing one of her knees and foot stretched out in front. In the original the hands and foot are those of a giant, but in the corrected transparency just right.

MR. VAN DER WEYDE promises us that shortly we shall have an opportunity to see the action of his invention, and we shall hope to be able to give our readers an illustration of its action. It is obvious that whilst this gives a true artist a new and hitherto unsuspected power, it also gives us the power of caricature, and we may now with the greatest of ease represent little heads on big bodies, or *vice versa*, and we have here the germ of a new photographic Du Maurier.

IN answer to a suggestion of a correspondent, we beg to inform our readers that in the "Optimus" competition, which closes on the 31st inst., competitors must not send more than one print in each class, and that separate entry forms must accompany each print.

OUR issue of next week will be of special interest, and all our readers will be wise to secure a copy early. We have something new and good, which everyone should see.

Chit-Chat.

ACCORDING to a telegram, received through Dalziel's agency, Col. Roche, of the Ecole Polytechnique, has discovered that it is possible to transfer the sensibility of a hypnotised person to a photographic negative of the subject, and that if the negative be scratched with a pin, the subject "would shriek with pain." Here, surely, is a field for investigation open to those who affect the scientific rather than the artistic side of photography. Such a discovery, however, gives rise to uncomfortable reflections; fancy the tortures which might be inflicted upon a sensitive subject whilst his negative was undergoing the stippling process of the retoucher, or the agonies that might be occasioned by the rubbing down of an over-dense negative with a rag and methylated spirit!

THE vexed question whether photographers, however artistic their productions may be, are entitled to rank as artists, has, it would appear, been settled by the Zoological Society, which, according to Mr. Gambier Bolton, admits artists to its menagerie without fee, but exacts one from the photographer "*because he is not an artist.*" What does Mr. Gambier Bolton himself think of this distinction? I venture to express the opinion that few painters have excelled Mr. Bolton's magnificent animal studies.

THE terrible mishap which occurred to your correspondent, Mr. T. B. Walshe, prompts me to remind your readers that the use of compressed gas in cylinders presents far fewer dangers than when bags are employed. Gas cylinders can be sent by rail or carrier, without damage or danger, anywhere, and their convenience in use is undeniable. The great majority of the accidents which have occurred in connection with the lime-light *have happened during the preparation of the oxygen itself*, and although thousands of cylinders have been in every day use for many years past, only one fatal accident due to the gas-bottle has, unless my memory is seriously at fault, been recorded, though minor accidents due to the careless use of gauges and regulators have happened. The moral of this is that even in experienced hands bottles are far safer than bags.

ALTHOUGH the exhibits in the apparatus division at Pall Mall are by no means numerous, there are several things which every photographer should inspect. Amongst them may be mentioned Messrs. Taylor's system of interchangable adapters, Messrs. Watson's studio-stand, which has every possible movement, controlled by a single handle, and Messrs. Beck's "Frena" hand-camera for films, the changing device in which is a perfect piece of mechanism.

EXHIBITIONS are now to the fore, and the prospectuses of several are to hand at the moment of writing. The custom of splitting up the exhibits into a great number of subdivisions and classes still largely prevails, and is, to my thinking, greatly to be deprecated. The practice, for instance, of relegating enlargements to a separate class has the effect of deterring many persons from competing, by which abstentions the promoters are seriously the losers, for some of our best men are now in the habit of making enlarged negatives, prints from which are, of course, debarred entry except they go into the company of raw, unwholesome-looking bromide enlargements, which somehow seem to find a way into every exhibition. CHATTERBOX.

Pictorial Photography at Charing Cross Road.

THE CAMERA CLUB "INVITATION EXHIBITION."

The opening of the present exhibition has been awaited with no little curiosity in various quarters. Much was expected of it—much has been done, and the Camera Club Executive will have no cause for any feeling but one of self-congratulation that the capacious wall-space of the clubroom is so worthily employed. The exhibition is unique in many respects; unique especially from the fact that the pictures have been sent only in response to direct personal invitation.

It was decided to hold an exhibition of pictorial photographs only; that is to say, photographs which aimed at being pictures in the higher acceptation of the term, irrespective of, or to the subordination of, technical excellence, and wholly exclusive of those photographic representations of special objects, the interest in which does not extend outside the philosophical, historical, or scientific, as the case may be. Hence only such workers who were known to make picture-making their especial study were invited, but the most casual observer of the collection of pictures thus brought together cannot but admit that these invitations have been issued with praise-worthy disregard for school or class, with the result that no one particular style or method of production can for a moment be said to preponderate amongst the two hundred frames hung.

The names of the three gentlemen upon whom has devolved the somewhat thankless and arduous duties of a "hanging committee" are well known, and what is equally important, known to be of diverse sympathies, and in some respects of opposite views on matters connected with art and photography, a fact which cannot have failed to inspire confidence amongst intending contributors.

With the wonderfully successful and effective hanging at Mr. Fred Hollyer's Dudley Gallery Exhibition fresh in our mind, we had for a moment hoped that the Hanging Committee at the Camera Club might have been able to advance somewhat in the same direction when arranging the pictures committed to them, but chiefly a want of space and also the extreme diversity of framing and mounting adopted by various exhibitors has severely handicapped any endeavour of this kind which might have been made. Inevitably we have pictures of various sizes, colours, and tone frame to frame without space or separation. Under the circumstances it could not be avoided, but it is noticeable that as far as possible pictures which might have been felt to be mutually destructive of each other's effect or directly antagonistic in impression have been kept apart, and indeed if one considers the matter closely, it may be found that a great deal more discretion and discrimination have been exercised in the arrangement than will at first be recognised. Whatever may be the dangers of an "Invitation" exhibition—dangers of omission and of commission in naming the selected few—one good result is very apparent, and that is the higher average of merit maintained throughout the whole. The exhibition under review may be regarded as of critical importance, and we would wish therefore to judge it as impartially and dispassionately as may be; yet do not hesitate to say that there has not yet been held an exhibition in which the pictorial and artistic quality has been of so high an average, and the mediocre or bad so scarce. There are not more than three or four things at most the presence of which the most exacting critic can seriously regret.

Consistent with the general scheme of the exhibition, the works of each contributor are in most cases, and as for as possible, hung adjacently, and in this manner we may proceed to notice them.

Julio Guardia, in Nos. 1 and 8, gives us evidence of some of the artistic possibilities of hand-camera photography. We take them to be of this class, but both, from the method of printing, namely, on rough paper leaving a masked-out margin, and from the general treatment, seem to elevate (as do many other similar little pictures in the room) the "Snap-shot" above its conventional sphere. No. 1, "Early Morning on the Thames," is perhaps the better, and although so small, yet seems to get a good deal of breadth into its limited compass. In both this and "On the Almond" (No. 8) there is a happy absence of those dark masses of under-exposure too common in work of this class; there is some nicely rendered foliage in No. 8.

Rowland Briant's two tiny pictures are remarkable in many respects. No. 2, "A Reed-Fringed Mere," and "A Winter Fog," hung on the opposite side of the room (No. 129), should receive more than passing attention, and in the face of so much existing conservativism in art matters, we cannot but admire Mr. Rowland Briant's courage, and wish that the same spirit of intelligent originality were a little more widespread. We believe Mr. Briant adopts some peculiar method of exposure, something beyond a modified "pinhole;" be this as it may, suppression of focus has been carried about as far as the senses will tolerate, but the breadth thereby obtained is not more commendable than the discreet printing and "tonality." True, in "A Winter Fog" (called also "A Study in Black and White") it is hard to tell where the print ends and the mount begins, so slight is it, but it is remarkably true. It is originality which just escapes affectation, but it *does* escape. "A Reed Fringed Mere" is extremely fuzzy, soft, mellow, brown, and poetic.

B. Gay Wilkinson, jun. This exhibitor has done better this year at Pall Mall, where it will be remembered he takes a medal for a number of clever things, chiefly sunset effects. Of the two pictures here, No. 3, "A Sussex Homestead," is perhaps the better, "The Millpool," No. 4, being unlike its author's usual style. The former is well-chosen and boldly executed and has all Mr. Wilkinson's individuality about it; perhaps mannerism has gone a little too far, so has the printing of the landscape, which, although against the light, is too dark for daylight, even sunset. Still, it leaves a strong impression upon the mind, and by no means an unpleasant one.

Karl Greger. We like Mr. Greger's work at the Camera Club much better than at Pall Mall, but are sorry that they are somewhat scattered. We may pass over No. 5, "The Lonely Fir;" it does not appeal to us; but in No. 6, "June in the Fens," there is more originality in subject; it is very simple in arrangement, but very effective, and the impression of midsummer sultriness has, we think, been well caught. A little further on is "Silver Thames" (No. 31) not so good. The sheep are too small and seem lost in the surrounding expanse, whilst the shadows under the low river bank are obtrusively heavy. The subject is almost a repetition of "Marshes of the Lower Thames," or some such title, in Pall Mall. But in No. 57, "Bognor Shore," Mr. Karl Greger more than recovers himself, and fully makes amends. We do not remember his ever having done anything better. The composition of the subject is simplicity itself, and may be a useful lesson of how much may be made out of the slightest material. If we may suggest to Mr. Greger, we should ask more of this kind of thing, which is free from the sin of prettiness, and then a little broader treatment.

But to return to the low numbers.

J. S. Bergheim, Nos. 7, 12, 13 and 14. The first and the last are replicas of Pall Mall pictures, which we shall have elsewhere taken opportunity of commending, but No. 12, entitled "A Sketch for a Larger Picture," is quite one of *the* things in the show, if not indeed the best figure-study in the room. Bold and striking in pose and illumination, Mr. Bergheim has given an admirable example of his masterly management of simple figure subjects. This essentially artistic worker is also seen to advantage in "The Daughter of the Sheik," No. 91.

Thomas J. Bright gives us several examples of dainty "Snap-shot" work, Nos. 10, 11, 22, 37 and 38. "In Pastures Cool," besides being a little gem—oh, so very tiny—possesses the distinction of being the smallest picture in the room, yet it *is* a picture, and is really worth the back-aching stoop which to see it at all its position necessitates. In "The Launch" (No. 57), Mr. Bright gets into a larger size, probably a composed picture, some seven inches by five, but beyond the quality of the distance and sky, is not so nice as the smaller work.

H. M. Hastings, too, has several little things of a like character, but he uses the now popular rough printing surface, and in more than one instance scores a distinct success.

Arthur Burchett's "Caller Herring" is fully characteristic of its author's skilful and painter-like treatment of large figures, but is perhaps hardly equal to some of his notable triumphs.

Col. J. Gale. Ever the same perfection of finish and faultless technique, the half-dozen typical pictures here shown will not perhaps be remembered as amongst Col. Gale's best. Still in "An Autumn Evening" there seems to be an approach to correct tone and atmosphere rarely attained. In "Under the Old Coast Road" and "At the 'Hard'" one may recognise well chosen bits on the Blackwater Estuary, and seem quite in keeping with the sentiment of the district.

Lieut. C. E. Gladstone and Frederick H. Evans have architectural subjects, and Richard Keene has a landscape, No. 29, but is much better in No. 96, which is a pleasingly soft and sunny scene at "Tissington Spires."

At Nos. 33 to 36 the writer is necessarily at a pause in confronting his own work, conscious of good intention but alive to many faults, and so willingly but with diffidence passes to the two large frames immediately adjacent, Nos. 42 and 43, in which Henry P Robinson's style is at once recognised.

In the former and larger, "Gossip on the Beach," we have a group of women and girls. "Among the Waste and Lumber of the Shore," with a bright and glittering stretch of sea beyond.

Clever though the grouping is, it seems to betray the forethought and intention which must have been bestowed upon it, and the eye resents the hard cutting outline of the figures against the distance. We are not quite able to understand the lighting of some of the objects, particularly the figure to the extreme left. Nevertheless, the entire picture is one which could only have been accomplished by

the master of combination printing, a field in which Mr. Robinson has no compeer. "The Rising Lark" (No. 43) is somewhat in the same vein as "Carolling," shown by Mr. Robinson several years ago, but we do not consider it is equal to the earlier work, either in treatment or conception. Far more natural and pleasing is Mr. Robinson's landscape with cattle, seen at the further end of the room. Still, we are glad to see that amidst the tide of revolutionary feeling Mr. Robinson is in no way inclined to forsake his earlier opinions. He has been a strong pillar of pictorial photography, and we would not have the space occupied by him here otherwise filled.

F. Seyton Scott has "A Fisher Woman" (No. 46) so admirable in pose and with such true surroundings that we hope Mr. Seyton Scott will be more prolific in the future, and let us see him as an exhibitor more often. His portrait (No. 45), too, has merit, but both frames are a little too high to admit of very careful inspection.

With something noteworthy in every picture hung, it is difficult to pass any without comment, but that our notice would exceed the limits of space, and moreover we feel sure that all our readers who possibly can will visit the Camera Club during the next few weeks, and observe for themselves. Hence we must pass over many that we should like to compliment, such as Walter Cassels, E. Resta, Henry E. Davis, G. Loppé, A. H. Fison, and A. R. Dresser.

F. M. Sutcliffe has four or five frames, of which "Sunshine" is by far the best. It is not in his usual style, but deserves great commendation for its near approach to the high key and luminousness inseparable from sunlight, but which in similar subjects is too rarely secured. Some of the best things done during the last few years have come from Mr. Sutcliffe, and it is evident that he has not yet spent himself.

We are so accustomed to look for reproduction work of high-class photogravure from Walter L. Colls that it is with some surprise that we find four or five very careful sympathetic little works here, direct with the camera, bearing Mr. Colls' name. Of these, "In the Basingstoke Canal" is very charming, bright, and atmospheric. There is very nice quality, too, in Clarence Moore's "Sunshine, Smoke, and Seaweed"—selection and treatment are both artistic.

Some really capital dogs and wonderful flowers and ferns—"Orchids and Ferns" and "Ratters"—are the work of Henry Stevens, who it would seem, in technique at least, has nothing to learn.

Alfred Maskell. This exhibitor has long been known as an exponent of out-of-focus methods, but has, in public at least, confined himself to landscape subjects. Whatever Mr. Maskell does possesses an intellectuality which should command attention, and hence, now that he essays to make portrait pictures, it may be well to consider before criticising. The "Portrait of George Davison, Esquire" and a "Portrait of a Lady" (Nos. 71 and 72) are hung here, and a portrait of another Camera Club familiar, "Victor A. Corbould, Esquire," at the far end of the room. Knowing Mr. Maskell's Impressionism, sympathies, and admiration of Whistler, it is not difficult to see the influence of this modern spirit upon him when producing these portraits. We hope Mr. Maskell will not go so far as to allow it to be said that he is merely aping the methods of a painter, for whilst there is something approaching the whimsical in these portraits, there is at the same time a worthy endeavour to escape from the conventional, which if rightly pursued should lead to higher success. No doubt Mr. Maskell is working in the right lines, and we wish him luck.

S. Bourne has a delightful little vertical landscape (No. 82) consisting of precipitous crags, foliage, and distance; it is very nice, and close to it are several small frames of work quite characteristic of its author.

Bernard Alfieri. In this exhibitor we have another instance of the professed landscapist showing portraits. Mr. Bernard Alfieri, however, gives us both. Of his four landscapes we like "Grass Hummocks" (No. 88) the best. For the first time we find this photographer using a rough-surface paper, but we should have liked to have seen it rougher still. Mr. Alfieri's technique is so dainty and faultless that while it keeps well outside, with room to spare, the sobriquet of "pretty," the spectator is apt to be too much occupied with admiration for the skilful craftsmanship, and lose some of the feeling of which there is much beneath. Mr. Alfieri's selection of subject usually shows nice appreciation of those things in Nature which too many would pass by unheeded. "Winter" (No. 86) and "Grey Dawn" (No. 89) instance this, whilst the sheep in "Sunset" are very happy. If his landscapes are delicate and refined, his portrait "Sweet Seventeen" is not less so. A pretty face, nicely rendered, without affectation in posing or lighting, and produced in very red colour, will probably be a good deal admired: it is very pleasing if not great. It is hung in a rather dark corner, apart from the other things by the same author, but should not be overlooked.

Shapoor N. Bhedwar sends a collection of five large figure subjects illustrating the initiation of a young Indian novitiate into priestly orders. Such subjects are difficult, but are admirably carried out and possess an interest peculiarly their own.

Next come exhibits by Walter R. Cassells, Robert Terras, R. S. Asb, F. D'Arcis, Francis Powell, R.W.S., and others.

Ralph W. Robinson surpasses, in our opinion, by a long way anything he has done before. Of the three or four pictures sent, "The Long Day Wanes" and "Making Friends" are the most noteworthy, and either of these were sufficient to establish their author's position in the very front rank. The entirely different character of these two are evidence of considerable versatility, especially remembering what excellent pure portrait work Mr. Ralph Robinson can do. In "The Long Day Wanes" we have a strong against-the-light effect on one of those flat landscape subjects a good deal employed of late by artistic workers. The materials which compose the picture are very slight, yet ample, and although the whole is perhaps somewhat too dark, yet the total effect is very fine. "Making Friends" (No. 123) is more in Mr. R. W. Robinson's usual vein, but this time he gets his models from amongst the picturesque French peasantry. Moreover, the figures are bold, strong, and are not overpowered by the landscape, a fault which we have sometimes seen in this clever photographer's pictures. Keep on, Mr. Robinson. We shall look forward with confidence of further pleasures in store for us.

George Davison's contribution to the exhibition he has taken so active a part in organising is rather a surprise, and we feel inclined to reproach the worthy Hon. Sec. for not better satisfying our expectations. Is it that the house-boat has been a castle of indolence and been productive of laziness, or is Mr. Davison preparing some *chef d'œuvre*—which has absorbed all time and thought. Not but what the tiny pictures which he shows here are all very nice and quite characteristic, only one expects from so prominent an artist-photographer something more pretentious than little quarter-plate bits," wholly pleasing in manner and material though they be. No. 133 looks like a little bit cut out of a larger plate and is very effective, whilst others suggest the work of his "Key Camera." Mr. George Davison's large pictures are very large, and would have taken up a lot of space, so perhaps it is only out of consideration to others that he has withheld his own contributions to the show.

Space forbids reference to Nos. 141 and 145 by Albert Kapteyn and Seymour Conway; and in No. 144 a well-known name, Rev. F. C. Lambert, is attached to "A Smoky Sunset," a nice composition, a thoughtful little picture, well executed, but too dark for sunset illumination, even if smoky.

On the end wall we shall find Mr. Lyddell Sawyer largely represented, in point of size, and clever work too, also Mr. H. Tolley, who has two landscapes printed on rough paper, but somewhat harsh, and of cold black colour.

We hope to return to this Exhibition for a little space next week, as there is much still to be noticed. We cannot, however, leave the gallery—for in very truth the Camera Club room, the scene of so many pleasant and social gatherings, has assumed all the dignity of a veritable picture gallery—without a prolonged pause before Mr. Eustace Calland's masterpiece—yes, a veritable masterpiece!—and we do not hesitate to say we have not yet seen its equal. It is needless to compare it with the work of a great modern French painter. It will stand on its own merits, but irresistibly the name of Corot comes to our lips, and we feel little inclined to efface its delightful impression by noticing at present the Belgian pictures which occupy the corner of the room, or the Tennyson portraits on the screens. The former are most noteworthy, and probably nothing quite like them has yet been seen in this country. So we pass out and are thankful that a new era in photographic exhibitions is foreshadowed.

The Leytonstone Camera Club are holding their first annual exhibition and competition on Thursday, Friday, and Saturday, the 10th, 11th, and 12th of November, at the Masonic Hall, High Road, Leytonstone. There are eight classes—four members' and four open. Sixteen very handsome medals are offered for competition. Lady Brooke has graciously consented to open the exhibition on Thursday, the 10th, at 6 o'clock p.m., and will in all probability be accompanied by Lord Brooke, who, by the way, are both amateur photographers. The judges are Mr. A. Horsley Hinton, Rev. F. C Lambert, and Mr. E. J. Wall. The exhibition will consist of photographic productions of the leading amateur and professional photographers in the United Kingdom; apparatus, etc., will be exhibited, together with some of the latest novelties and appliances; lantern displays will be given twice during each evening; the prize slides of the competition, *Photography* 1892 prize slides, dioramic effects, etc., will be shown, demonstrations, lecturettes, and other entertainments in the small hall and studio; a fresh feature every half-hour throughout each evening, high class musical selections by the Viennese orchestra, under the direction of Signor Constantine Baga. Entry forms and particulars of the open classes and spaces for exhibits can be had on application to the Hon. Secretary and Treasurer, Albert E. Bailey, Rose Bank, South-West Road, Leytonstone.

Letters to the Editor.

THE P.S.G.B. MEDALS.

SIR,—I have become painfully aware from your columns for the last few weeks, that the annual wrangle in connection with the awards at the P.S.G.B. Exhibition is now in full bloom, and it has occurred to me to ask why are not the photographs judged under a *nom de guerre* or motto, the competitor's names to be in sealed envelopes which would not be opened until the completion of the awards?

This would appear to me to be a satisfactory and conclusive method which would silence all objections, for it must be admitted that successive award lists do bear a striking similarity to one another and a disheartening absence of new names. Then the discontented and unrecognised competitors would have their battle-cry of favoritism and cliqueism taken from them and all would go "merry as a marriage bell," and the outside public would be spared the very unedifying spectacle of the little photographic birds tossing each other out of their little P.S.G.B. nest.

The method I advocate is always adopted in architectural design competitions, and if (as I expect) it would not alter the award list to any appreciable extent it would at least let us have peace and quietness in our photographic world, and enable us to show a firm and undivided front to that cavilling, cold-blooded, and unappreciative demon, the great British Public.—Yours, etc., J. LLOYD MORROW.

P.S.—Would you think of giving the scheme a trial in connection with your own competitions?

[This suggestion is, we are afraid, quite useless, because the best workers always stamp their work with their own individuality, so that anyone who has been in the habit of seeing exhibitions is able to name at once the operator—a complete parallel being found in the Royal Academy. With regard to our own competitions, the judges do not know the competitors' names, but it is so easy to say, "Oh! that's So and So."—EDITOR.]

* * * *

DARK-ROOM AT LLANDUDNO.

SIR,—The new dark-room at Llandudno, erected this year by members of the society, is an excellently appointed affair, its conveniences are ample, and charges exceedingly moderate.

The members with whom I came into contact were most courteous, and gave me many useful hints regarding the photographing of the neighbourhood. Thanks to the notice which appeared in the AMATEUR PHOTOGRAPHER some months since, I was not long in discovering the locality of the room.—Yours, etc., ALF. J. JEFFREYS.

* * * *

HAND-CAMERAS.

SIR,—My attention has been drawn to your issues of the AMATEUR PHOTOGRAPHER September 16th and 23rd.

The hand-camera mentioned on pages 197 and 212 is an infringement of my patent applied for in May last, and I caution any one making and selling the same without my authority.

The only authorised person is Henry Crouch, Barbican, London.—Yours truly, JOHN S. B. BELL.

[Before we received this note from our correspondent, we had inspected one of these cameras at Messrs. Crouch's, and the same idea struck us. Our readers will please note this.—EDITOR.]

* * * *

FERRO-PRUSSIATE AS A RESTRAINER.

SIR,—I must thank Mr. Schultess-Young for calling attention to the excellent restraining properties of yellow prussiate of potash, and I note another correspondent does so also in last week's issue of the AMATEUR PHOTOGRAPHER.

In my experience one can get far better results with it, and clearer shadows than with bromide, and above all, the negative is much more amenable to after treatment. With hydroquinone I find it has a tendency to give too much contrast, but with other developers it leaves nothing to be desired, and does not slow the image as bromide does.—Faithfully yours, T. C. BURNARD.

* * * *

PHOTOGRAPHERS' BENEVOLENT ASSOCIATION.

SIR,—There are various reports as to the state of business amongst photographers during the past season, but those who are in the best position for knowing tell us that the winter outlook for assistants, at any rate, is a bad one. This being so, may I say a word about the Benevolent, and the claim it has upon photographers?

In various recent cases of distress local efforts have been made and special subscriptions raised without any appeal being made to the Benevolent Association, the committee of which has usually heard of the case when too late to be of use. As the Association always prefers to grant prompt and practical relief, not only in money, but also in that help which is often better than money, no man who knows of a deserving case need be afraid to make application. In every case the Association makes the most careful enquiries, but treats the particulars in strict confidence. Where a loan will afford the necessary relief the grant is always made in that form, and it is satisfactory to subscribers to know that in some cases men who have been entirely broken financially have been so firmly set on their feet by the Benevolent as to be able to pay back every penny advanced, so that an excellent work has been done without any real expenditure of the funds.

In connection with the work of the Association there is an employment bureau, upon which we have at present the names of a large number of assistants of almost all classes, and some of them very good men, who are seeking situations. Employers who want assistants will greatly help the work of the Benevolent if they will make application to, yours faithfully, H. SNOWDEN WARD,

SECRETARY, PHOTOGRAPHER'S BENEVOLENT ASSOCIATION.

Memorial Hall, E.C.

* * * *

AN APPEAL.

SIR,—Can any of your readers assist the Ragged School Union by the loan of any negative illustrative of the lower stratas of London slum life, for the production of lantern slides to illustrate lectures on behalf of their work? Pictures of street arabs, itinerant vendors, costermongers, street markets, old alleys, gutter children, or anything typical wanted.

A postcard to Mr. John Kirk, 37, Norfolk Street, Strand, or to William H. Steer, Market Place, East Grinstead, describing negatives, will be thankfully received and receive prompt attention.—Yours, etc., W. H. S.

* * * *

TRANSPARENT MARKINGS ON GELATINE PLATES PRODUCED DURING WASHING.

SIR,—I have read Messrs. B. J. Edwards and Co.'s reply on this subject founded upon an inspection of my defective negative, the markings, as they say, being caused primarily by the use of a developer which evidently contained far too much alkali, but I venture to submit that this opinion is founded on insufficient premises, because it is impossible to judge of the cause of the defect upon mere view of this solitary negative, and without knowledge of what medical men would call the history of the case. I should have thought that this developer with its "far too much alkali," if that had been the cause, would have destroyed the gelatine in every film immersed in it, instead of which it has behaved well with many scores of plates and celluloid films from my very first trial of it in August, 1890, until the middle of September, 1892, when after using about half of my stock of developer from a bottle which when filled held a quart, the markings in question appeared, but since I dissolved the oxide from the zinc washing trough as explained in my last, the remainder of the bottle of developer has produced negatives in all respects satisfactory. It may be said that I am wrong in some of my conclusions. To prove the contrary, I enclose from negatives developed with the mixture in question, printed in their natural state, and without manipulation of any kind, eight prints as follows:—

No. 1.—Negative, Edwards' celluloid film; exposure, 23rd August, 1890.

No. 2.—Negative, Edwards' instantaneous plate; exposed same day. These were developed, printed, and mounted as they now appear, during that month of August. They are the first produced by me with this particular developer.

Nos. 3 and 4.—Negatives, England's celluloid films; exposure, October, 1890, from a batch of about three dozen, all much of same quality, printed by a manufacturer.

No. 5.—Negative, Edwards' Isochromatic plate, one of a dozen, on same kind of plate.

No. 6.—Negative Edwards' instantaneous plate. The two last were exposed in August, 1892, developed about a month afterwards, and printed by me. At this time excellent results were obtained. I had for days together and each day over a dozen negatives of average quality, then came the sudden appearance of the transparent markings and treatment of the zinc tank with

sulphuric acid, as already described, after which on resumption of work with residue of same bottle of developing solution, first-rate results were obtained. In proof of this:—

No. 7.—Negative Edwards' instantaneous plate, exposed August last.

No. 8.—Negative Edwards' instantaneous plate, exposed in September last, both developed and printed by me this month. The last two from a lot of about sixty.

I think you will agree with me that with all the faults of these eight prints, spottiness cannot be counted amongst them.

The concluding remarks of Messrs. B. J. Edwards and Co. are excellent in their way, but they only give another rendering of an oft repeated wrinkle which I have always adopted, viz., "Never condemn any particular brand of plate till you have tried it with the developer recommended by the maker." Bearing this in mind when my old mixture seemed to fail, I developed some Edwards' celluloid films with Edwards' hydroquinone developer in two solutions, which I purchased last June from a city store. The result was unfavourable, for now innumerable opaque black specks appeared all over the film, which in printing might represent a snowstorm. Still, I did not blame the celluloid film. I submitted the result (*i.e.*, the enclosed negative) to an experienced friend, who thought the specks were caused by the recrystalisation of the hydroquinone which had become deposited in the substance of the film. Good gracious!—I do not pretend to know anything about it—I thought I had experienced every possible kind of difficulty which could encounter the photographic student, but I am mistaken, and so I have resumed operations with Edwards' plates and the old mixture, of the ingredients of which I am ignorant, neither do I know anything of its manufacturers, nor anyone connected with them, nor interested either in its production or sale.—I am, yours, etc., C. OF A.

* * * *

THE "A. P." LANTERN-SLIDE COMPETITIONS.

SIR,—I notice in last week's issue a letter, signed by "Puzzled," on the AMATEUR PHOTOGRAPHER Lantern-Slide Competitions, and welcome your foot-note to it, as I had given up the Annual Slide Competition on a similar account. Surely you are not going to debar Mr. J. E. Austin, who, as your predecessor said, "has taken about fifty medals"—only fifty! Well, if it had gone on much longer, I think he would have had the competition all to himself. He is quite at liberty to flatter himself and think we are afraid of him, in a similar manner to a lad coming from the sixth standard at school and crowing to those in the first. But if these competitions are treated justly we will only be too pleased to take our stand against him, either at the P.S.G.B. or elsewhere.

There is Mr. John Hodges, the very gentleman that we are looking to for our instructions, carrying off our medals. I think when a man becomes an instructor he should conscientiously cease to be a competitor. I am glad to see that Mr. Dresser, who I had placed as one for a medal in your recent competition, is being rewarded elsewhere, where he would have a hard fight.

Now, Sir, I have something to say which is of far more importance than the foregoing. Has not Mrs. S. Francis Clarke's work already met with its reward in a former competition? Were not "After Mass," "Laughing Eyes," and "Curiosity" gold medal pictures in the Ladies' Competition?

If those slides have been produced from the same negative, then I say most emphatically that she ought to have been disqualified.

This letter is written for the good and protection of those that are "coming on." I was not a competitor in the last competition.—I am, etc., WILLIAM MCEWEN.

* * * *

SIR,—Having for four years been awarded a first, and this year the only final progressive medal in your annual lantern slide competition, I feel myself somewhat implicated in the charge brought by "Puzzled" against the gold medallist. Perhaps you will kindly allow me a few words in reply.

In former years this competition was intended to be the test of quality of the year's work by the amateurs of this country, and, as such, past prize winners were encouraged to compete by the offer of progressive medals, so that when the slides were sent on tour to the societies, both here and America, they should be fairly representative of the work of British amateurs. If the gold medallists are disqualified each year, I trust that it will be so stated when the slides are exhibited, and that it is a competition for "younger workers."

I fail to see the unfairness of anyone entering the competition, for, being an open one, nobody is "sure of a medal." One man has as good a chance as another, and it speaks ill of British pluck when one amateur is afraid of another for the simple reason that he happens to have won a medal. All the more honour if he can beat the past medallist, and keep it up year after year, so as to show that he has not won it by a fluke.

With regard to the number of slides, I should advise you to increase them to twenty, for by reducing them you encourage that random and careless method of exposing plates the modern amateur too often indulges in, for he nowadays exposes at least two hundred plates in the season, and trusts to luck to pick six good ones for the competition.

According to the rules, having been awarded three gold medals, I am eligible to compete again in this competition, but Mr. Austin has I believe yet another chance, he having failed to get the gold this year.

I trust that in future years "Puzzled" will put his shoulder to the wheel, and thus find that his puzzle is solved, and will no doubt carry off the three gold medals.—Yours truly,

J. W. WADE.

SIR,—I read with much pleasure the letter from "Puzzled," pointing out the inconsistency of allowing certain workers year after year to carry off your medals, and until I did so, was certainly under the impression that your rules precluded such a possibility. In the Monthly Competitions it is so, and certainly should be the same in your "At Home," "Lantern" and other competitions.

After all, success in photography is largely a matter of £ s. d. and plenty of spare time. There are undoubtedly many who, no matter what was their wealth, would die "unwept, unhonoured, and unsung," and who consequently would never come to the front, but, given both the above requisites of cash and time, plus a fair amount of artistic feeling, and the owner thereof is almost bound to scoop in medals galore.

It is hardly fair, as you will admit, to pitt such against perhaps equally good or better workers, but who may have the misfortune to be in business all day, and dependent on their holidays and odd half-Saturdays, with all the attendant risks of bad weather and light for any work they may do.

I can readily understand an Editor wishing to turn out the finest work procurable, but when such is obtained at the expense of the bulk of his supporters it is hardly fair, and, as your "puzzled" correspondent points out, a large number do undoubtedly abstain from competing when they know that year after year the plums always drop into the ravenous maws of the same individuals. Such is certainly the case with MOI-MEME.

* * * *

THE "PHOTOGRAPHER'S RECORD."

SIR,—In our letter in your last issue it appears that we offer to send our monthly journal post free to individuals. Our letter should have read, we will send supplies to secretaries of societies and dealers in photographic goods, post free and carriage paid.

We have already been overwhelmed with letters from amateurs, asking us to send the paper, and as far as possible we will endeavour to do so for this issue only, as the mistake was our own, but in future we must respectfully ask those who desire the paper sent direct to them to forward us stamped *addressed* wrappers.—Yours, etc, ELLIOTT AND SON.

Mr. Gambier Bolton, F.Z.S., will deliver his lecture, on "Wild Animals in Captivity and Domesticated Animals," illustrated with 150 slides from his well-known studies, before the Uttoxeter Am. Phot. Assoc. on November 4th.

The Eastman Company, of Rochester, U.S.A., have been successful in restraining two of their old employes from using or employing certain secret processes for the manufacture of films and bromide paper, which they had learnt whilst in the plaintiff company's employ.

Lady Murray informs us that owing to the large increase in Indian and colonial business of the sale of her excellent sensitised paper, she has been compelled to change to more commodious rooms, situate at 18, Chichester Road, Westbourne Square, W.

How to Make a Set of Photographic Apparatus.

By H. J.

Chapter X.

THE INSTANTANEOUS SHUTTER.

I have found it a matter of much difficulty to decide on the form of instantaneous shutter I should describe in this series of papers, and after hesitating for some time I have settled on the two forms which I am about to give instructions for making, as being most suitable for the purpose, as they are both quite efficient for the purpose they are intended for and they do not require any very exact mechanical work. Had it not been for the reason that I was afraid of putting in too much of the latter, I should have decided on a shutter with a roller-blind, as they are very good ones; but while there might have been some able to make it, by far the largest majority would be obliged to throw it on one side, therefore I have decided on what I believe will suit most of my readers, and if some of the more clever ones wish for a more elaborate shutter, I will write a special paper on the subject—that is, with the Editor's permission.

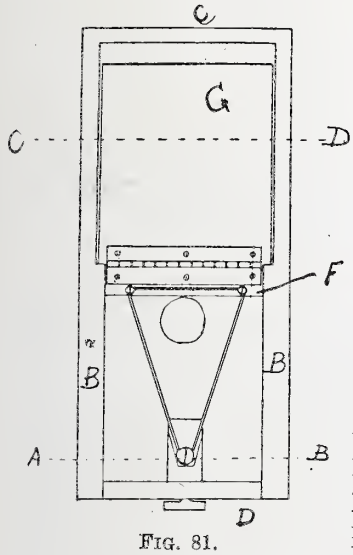


Fig. 81.

I have written these few lines of explanation in case some might say, or think, that the shutters in this paper are too simple to find a place in the pages of our paper; but you must bear in mind that the simpler they are the less likely they are to get out of order, as many of those will allow who have spent pounds on a shutter, and after all come back to one which did not cost so many shillings.

I will first describe the shutter shown in figs. 81 to 85. It can be made of various sizes, but the one I am describing is suitable for a lens with hood of $1\frac{3}{4}$ in. in diameter, or under, and it is made wholly of mahogany. The back piece A in the figures is 6 in. by $2\frac{1}{2}$ in. and a half inch thick. On the sides of this are screwed the two pieces B; these are $\frac{3}{8}$ in. wide by $\frac{1}{4}$ in. thick, and a rabbet is made in each of them $\frac{1}{8}$ in. each way, so that when they are fixed on the back a groove is formed down each side, as shown in fig. 82;

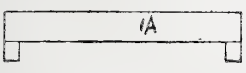


Fig. 82.

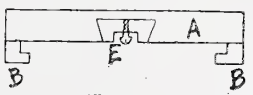


Fig. 83.

but before screwing them on, the rabbetted part must be cut away for half the length, as shown in figs. 81 and 84, so that the top half of shutter is of the section shown in fig. 83. A top piece can now be screwed on to the back to bring it out level with the side pieces C, figs. 81, 84, and 85, and a bottom piece D in the same figures; this must project an eighth of an inch in front of the side pieces. I find I am getting on too fast. Before screwing on the bottom piece D, a slot must be cut out of the back as at E, fig. 83; as will be seen, it is cut as a dovetail, and should run up the back for a distance of 2 in. Into this slot fit another piece of wood, but only one inch long; it must have a trench cut out for a part of its length as shown; and in the bottom end—that is, the end which is left intact—a plug-nut must be inserted.

This sliding piece can be placed in the dovetail slot, and the bottom piece can then be screwed on, and a hole made for the screw to pass through into the nut. The hole can now be bored through the back for the lens; it should be in the middle widthways, and about $1\frac{3}{4}$ in. from bottom to centre of hole.

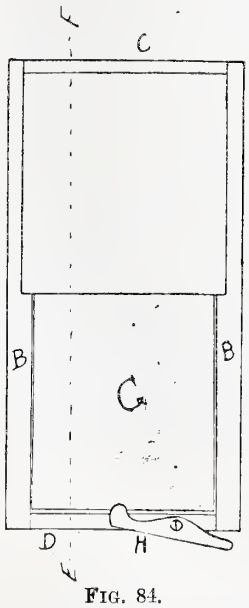


Fig. 84.

A piece of wood an inch wide can now be fitted so that it will slide easily up and down in the grooves; this is shown at F, figs. 81 and 85. It must have no more play than is absolutely necessary, either in thickness or width, but be just loose enough to move without friction. Another piece of the same thickness must now be fitted into the lower part of shutter. In width it must just slide in the grooves as before; in length it must reach from the bottom of shutter to where the grooves are cut off. It is shown in the same position at G, fig. 84, but more clearly in section in fig. 85. These two pieces F and G must now be hinged together, using a hinge the right length to reach across G. After this is done, and F placed in the grooves, and G opened up so that it lies flat against back of shutter, the two pieces should fall by their own weight to the bottom. If they will not do so they are too tight, and must be eased until they do, when they may be considered right. Two small round head-screws must now be inserted in the piece F in the positions shown in fig. 81, and also one in the sliding piece E at the bottom of the part cut away, or rather at the bottom of the trench formed by cutting a part away. The small brass trigger H can now be screwed on as shown, and the spring I, fig. 85, screwed to the flap G. This will finish the shutter, and I will now explain the action.

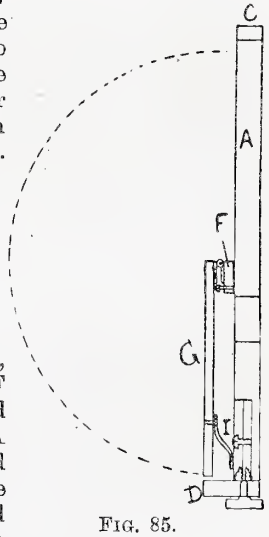


Fig. 85.

Place a rubber band on the three screws, as shown in fig. 81, and push up the sliding piece F until the piece G will fold down and rest on the bottom piece D. A slight turn of the trigger will hold it in its place until required to be set off; to do this press on the end of trigger, when the flap will be released and started on its upward journey (as shown by dotted circle in fig. 85) by the spring I, when it closes against the back of shutter, the rubber band comes into operation and closes the aperture by pulling the sliding pieces to the bottom. This is therefore a combined flap-and-drop shutter, which is recommended by some of the highest authorities, for its ability to give more exposure to the foreground than to the sky; and though some may object that it is likely to cause the camera to shake, it is not so in practice, as when the flap flies upwards the air forms a kind of cushion

which effectually prevents any jar, but causes it to work beautifully and smoothly. The shutter can be regulated for fast and slow exposures by turning the milled-head nut at bottom, which tightens or slackens the rubber band as necessary, and the speed can be regulated further by using weaker and stronger bands as slower or faster exposures may be required. The pneumatic release can be added to the shutter by making the catch part of trigger to project at right angles under the bottom of shutter, and fixing the bulb end of tube between the two so that when the ball is pressed the expansion of the bulb will force the catch back and release the flap.

We will now turn to shutter No. 2, which is illustrated in fig. 86. For the back of this a piece of half-inch wood, 4 in. by $2\frac{1}{4}$ in., is required, and on this, all round, strips must be screwed so as to form a shallow tray about $\frac{3}{16}$ in. deep. The hole for lens must now be bored; this must be in the middle lengthways, and one inch from the bottom of shutter back to centre of hole. Now screw on the slotted plate L, level with bottom of shutter, and fit a piece of wood about an inch and a half long, and the width of brass plate, so that it will slide from end to end of shutter easily between the plate and back of shutter. The shutter itself must now be made out of a piece of wood $\frac{1}{8}$ in. thick, or, what is better, a piece of ebonite; the shape is shown at M (the dotted circle

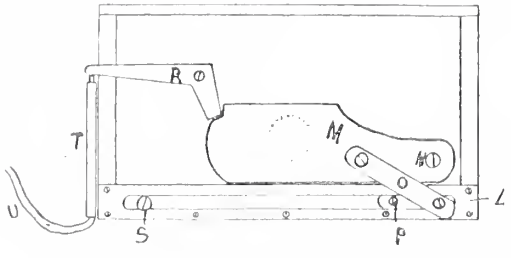


FIG. 86.

shows the hole for lens in *back*, and not in shutter). This is fixed by the screw at N, so that it will move up and down freely. The short arm O must be made next, and fixed to the shutter, and also to the sliding piece by screws as shown, the screw in the latter passing through the slot in brass plate. Another small screw must also be inserted in the sliding piece as shown at P; this acts as a guide to keep sliding piece straight, otherwise it might get round end-ways sometimes and cause a hitch in the working of shutter. The brass trigger R must be fixed next, a part of the side, or rather end, being cut away to allow the end to project through.

The screw S can now be inserted in the slot at the end as shown, allowing the head to stand up sufficiently to allow an india-rubber band to be slipped over it. The shutter can now be tried. Place a moderately strong rubber band on the two screws P and S and slide the former back to the end as shown in drawing, allowing the trigger R to engage in the notch in shutter. The band will now be stretched tight, and on the projecting end of trigger being pressed slightly upwards the shutter will be released, and the band pulling the sliding piece along the slot in brass plate, the lever O will cause the shutter to fly up and down again, thus opening and as quickly closing the lens aperture.

If the pneumatic release is preferred it can be managed by fixing a small brass tube to the end where trigger projects as shown at T. In this a piston is fitted, and the rubber tube of ball being attached to lower end of brass tubing, a slight pressure on the ball will cause the piston to rise and push up the trigger. The front of shutter can be covered with a thin board, except the slotted plate, which must be left open for adjustment of shutter.

Various speeds can be obtained by the use of rubber bands of different strength, and a sliding piece can also be fitted on to front board with various size holes, so as to act as different stops. Then the shutter can be made very serviceable either for fast or slow work, and there is nothing about it to get out of order. Though I do not think it so good as No. 1 for general work, it is equally as good as regards shaking the camera; as the only time that it is possible to shake, is after the exposure is over, when of course it does not matter.

I give below a list of fittings with prices of same, according to my usual custom.

	d.
For No. 1 Shutter.	
Hinge for flap	3
Milled-head screw to regulate speed	4
Spring (I) and catch (H)	6
For No. 2 Shutter.	
Slotted brass plate	6
Lever (O) and trigger (R)	6

Pneumatic tube and ball for either No. 1 or 2, 2s. 6d.

(To be continued.)

The Manipulation of Chloride of Silver Gelatine Paper.*

BY EDWIN UNDERWOOD.

IN laying before you my method of manipulating chloride of silver gelatine paper, I make no pretensions to exhaustiveness or completeness either as to the various ways in which the paper may be treated or of the various makes obtainable. Besides some that I made myself some years ago, the only brands I have used much are the Ilford, the Eastman, and the Birmingham Photographic Company's Criterion; most of my prints being on the Ilford and the Birmingham paper. Although the general treatment of them is the same, they all have various characteristics which require to be known. They differ from each other in the colour they assume in the printing, and they behave differently in the after operations of toning and fixing. You will see that they are over-printed certainly not more, if so much, as albumen prints, and in this particular they compare favourably with some of the older gelatine papers, which required such a depth of over-printing as to render it difficult and uncertain to print to a nicety on them. The loss of depth with these papers occurs mostly in the washing before toning, and they lose but little in the fixing. They lose less with the combined toning and fixing than with toning and fixing done separately. Gelatine chloride paper must be kept dry, as it is more susceptible to damp than albumen paper. If not kept dry it will give patchy and uneven prints. If the printing is done out of doors it will be advisable to have an india-rubber pad in the frame at the back of the paper, otherwise it is not necessary. After the printing comes the toning, and the formulæ for toning these papers are very numerous.

The toning and fixing operations may be conducted separately, or a combined toning and fixing may be used. The simple toning bath varies from the single sulphocyanide of ammonium and chloride of gold one, to one of half a dozen chemicals, and some of the combined baths are stupendous mixtures, containing alum and lead salt abominations. Why they are out of place is because they decompose a portion of the hyposulphite of soda, and liberate a portion of the sulphurous acid and sulphur which is held in combination. These will combine with the silver of the image and form sulphide of silver, causing what is known as sulphurisation or sulphur toning, and prints so toned are liable to fade and discolour. I have here a series of eight prints toned and fixed in the combined bath. Four of them are on the Eastman paper, and four of them on the Birmingham Company's Criterion paper. Two of each sort of paper were treated in a bath containing:—

Hyposulphite sodium	4 oz.
Sulphocyanide of ammonium	100 gr.
Phosphate sodium	60 ,,
Chloride of gold	2 ,,
Water	16 oz.

The other four were treated in a bath in which 100 gr. of borax

* Read before the Birmingham Photographic Society.

replaced the phosphate of sodium, and you will see on inspection that there is no perceptible difference in tone. All combined baths require an unfixed print or some scraps of silvered paper soaking in some hours before use. The one great recommendation of the combined bath is, of course, that it is so much less trouble than toning and fixing separately, there is much less swilling and washing. The danger attending its use is that when it has been in use some time, the fixation of the prints may be imperfect, and although the gold may be exhausted, it will go on toning. Now, these conditions, imperfect fixation and sulphur toning, are precisely the conditions under which the print may be certain of a short life, and will result in the unmerited condemnation of paper and bath.

I know of no reason why, if the bath be used fresh and with sufficiency of gold, the toning and fixing should not be complete, and the prints be as permanent as if treated in any other way; but if the bath is used too much, you get yellow-stained prints with the half tones, a most unpleasant colour. I have here some prints made on the Ilford paper more than twelve months ago and treated in the combined bath. You will see that they are warm in tone, and the combined bath has in my hands given better results in this particular than separate toning. When using the combination bath the colour is judged from the surface, not by looking through, and the prints dry perceptibly darker. Coming now to toning pure and simple, the bath I have used mostly is the Ilford formula, viz.:—

Sulphocyanide ammonium	30 gr.
Chloride gold	2½ ,,
Water	16 oz.

When a tube of chloride of gold is broken it has to be made up into a solution of definite strength, and will usually be found to be decidedly acid. A small scraping of ordinary chalk—not French chalk—should be shaken up in it to counteract this acidity. The prints require washing in several changes of water before toning, and they should not be left soaking in the first two changes. On immersion in the toning bath, the prints change more or less with various papers to a yellow colour. This soon passes away, being succeeded by a purplish-brown, and the progress of the operation is judged by holding the print up against the light. At first the print appears of a reddish colour all over; the next stage the lighter half tones become dark or black, followed by the middle tones, and when the red has almost disappeared from the deep shadows the toning is complete, the surface colour being of a peculiar blueish purple. A washing in two or three changes of water follows a fixing in hypo-sulphite of sodium—3 or 4 oz. to the pint of water, a small bit of washing soda being dropped in to counteract possible acidity. The prints require a final washing of about two hours under the tap or in a pan of water changed many times. This toning bath, as you will see from the prints, gives dark tones, being what I might perhaps call a warm black. With this bath I have been unable to obtain the lighter or brown tones on any of these papers. If the print is taken out while there is any considerable portion of red left in it, you have the shadows of a brown colour, but the lighter parts have toned completely to the warm black, and the result is an unevenly toned print, as in two I will pass round. With this bath, therefore, you have to tone completely, and it has the advantage that you can depend upon getting a very fair uniformity of colour in the prints. The bath will keep, and can be used for some time, but I prefer to use it not more than two or three times, adding, of course, more gold as required. It is recommended to use the old bath as part basis for a new one, but I prefer to make up a fresh one, having a weakness for new and clean baths. Most of the toning troubles with this paper will be found to arise from an insufficiency of gold, and we should be generous with the gold, remembering that the more gold the prints will take up the better it will be for their permanence. I have used the borax toning with the Ilford paper, and have obtained pleasing warm tones with it, as seen from these prints. The proportion is 90 gr. borax to 16 oz. water, gold 2 gr. more or less. Gelatine papers require careful handling, as the gelatine when wet is very soft and soluble. Advantage is taken of this softness when wet to squeegee it, as it is called, on to a surface of glass or other suitable non-absorbent material. When dry it is stripped off, and retains the impression, whether glazed or matt, of the surface on which it dried.

All mine are, as you see, matt-surfaced, and are done on ground glass, and as there is sometimes a difficulty experienced in separating the print, or some portions of it, from the glass, I have thought it best to give details. In the first place you must have the right sort of ground glass. The ordinary window description is of no use at all for the purpose, it is altogether too rough and coarse, and the prints will not separate readily, neither will it give the surface required. The sort to employ is such as is used for focussing screens in cameras. The first thing to be done is to make the glass thoroughly clean, and this I do with soap, soda, hot water, and a scrubbing-brush. I do not find acids, ammonia, or such like at all necessary. Give the glass a good scrubbing on both sides, and then wash thoroughly under the tap, rubbing it all over both sides and edges, so as not to leave any trace of soap or dirty water, then dry off with a perfectly clean cloth. This done, it has to be rubbed all over with French chalk on a piece of soft rag; use plenty of the chalk, and rub it well all over, but not hard enough to bruise the talc. If the chalk sticks on to any particular part, and it will not rub off, it is a patch of dirt, and is insufficiently washed. It is not necessary to wash the glass every time it is used, if it is kept clean and not finger-marked on the surface used; it only requires rubbing lightly over with the chalk. Another point, too, worth noting is, after the glass has been stripped from a few times, the adhesiveness of the print is very much reduced. The first time of stripping, the hold on to the glass is so great that you feel sure something will happen, but after a few times the print comes away quite easily and altogether. The print may be squeegeed on to the glass direct from the washing water, or it may be dried first. I usually let mine dry and lay them down on the glass some other convenient time. Taking a dry print, then, it is immersed in clean water till quite limp, which will be in a minute or two, but do not leave it soaking for a length of time. Having then lightly dusted off the French chalk with a clean, dry cloth, we brush over the surface of the print while under water with a camels'-hair brush to remove air bubbles and any dirt there may be, and lift out the print by two corners, bringing with it as much water as we can; then we lay it down on the glass in such a manner as to cause the water to drive out the air from between, and finish with a few light strokes with a roller squeegee. When it is thoroughly dry, but not before, the point of a knife is inserted under a corner, and the print lifted from the glass.

Exhibitions.

Society.	Entries close.	Opens.	Closes	Address of Secretary.
P.S.G.B.	—	Sept. 26	Nov. 10	The Assist. Sec., 5a, Pall Mall East
Stockport	—	Oct. 17	Oct. 23	B. S. Harlow, Buchan House, Heaton Norris, Stockport.
East London Photo. Soc. ...	Oct. 18	Oct. 24	Oct. 25	M. A. Wilkinson, 23, Shacklewell Lane, Kingsland
Todmorden Scientific Assoc.	—	Nov. 5	—	Jno. T. Binns, 3, Garden Terrace, Todmorden
Hackney Photo. Soc. ...	Oct. 29	Nov. 15	Nov. 17	W. Fenton Jones, King Edward Road, Hackney
Leytonstone Camera Club...	Oct. 25	Nov. 10	Nov. 12	A. E. Bailey, Rose Bank, South West Road, Leytonstone
Brixton	—	Nov. 17	Nov. 19	F. W. Levett, 74, Geneva Road, Brixton.
Stanley Show...	—	Nov. 18	Nov. 26	H. Smith, 29, Finsbur Pavement, E.C.
South London	—	Nov. 24	Nov. 26	Chas. H. Oakden, 51, Melbourne Grove, E. Dulwich
Exeter Amateur Photo. Soc.	—	Nov. 24	Nov. 26	Rev. J. W Sparshatt, Fairfield House, Alphington Road, Exeter

PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN.

Concluding Notice.

THE work of Adam Distin shows him to be as strong as of old, and he has still the courage to attempt pictures which are regarded by painters as quite beyond the sphere of the camera, except perchance when employed in translating their work into monochrome. It must be admitted that when story telling is attempted by the photographer, the difficulty of giving true life and reality to the expression of the models is so great that the successful efforts are few and far between. As might be expected from such a conscientious worker, the number of pictures exhibited by Mr. Distin since his first great success, "In the Gloaming," has been very limited; and it is only at long intervals that his characteristic productions have appeared on the walls at Pall Mall. This year the two pictures he has sent exhibit the well-known individuality of the worker, but the preternatural gloom has been considerably lessened and the artistic gain is very great in consequence. As in former work, the accessories have been well subordinated, but the method is less visible. "The Rehearsal" has a distinct element of fun in it. An enthusiastic performer on brazen instruments is breathing—or rather blowing—his soul into a mighty brass horn; but the strong, if not sweet, sounds have no effect on an old lady who is fast asleep in her chair. She is probably stone deaf, for how otherwise could she be so utterly oblivious to the mighty sound completely within ear-shot? In contrast to the energetic action and puffed-out cheeks of the performer, the placid expression on the old lady's face is highly ludicrous

"The Highland Smugglers" is also a well thought out picture. The fire is blazing away under the still, and the arch alchymist, who is no other than Mr. Distin himself—and I hope the exciseman will not read these tell-tale lines—is busy transforming the malt wort into potent spirit, but is arrested in his labours by some doubtful sound. A kilted assistant is eagerly craning his neck to the key-hole of the door. The pose of this figure well expresses anxiety and doubt. The story is well told, and the picture may be considered quite up to the high standard attained by Mr. Distin.

"Evening Ebb," by P. B. Broomhall, is a small picture, but a striking one for all that, and well shows that with effective light and shade a picture may be constructed of the simplest materials. In the one under notice there is a mill, not particularly picturesque, and a muddy river near it. A boat is moored near the mill, and a shallow creak trails its snake-like course through the foreground. The light on the wet mud is very effective, and gives point to the whole picture.

The snow pictures by Mrs. Main, called "Frost and Sunshine," are certainly very fine, and perhaps the most striking feature is the wonderful rendering of snow in shadow. In one especially the high lights are most limited, and the effect of the great masses of snow in half tone, with only here and there a magic touch of high light, is extremely beautiful. There is an absence of the excessive blackness in parts so frequently met with in snow photographs, whilst the delicacy of detail could not be surpassed. The frost studies of G. Renwick must not be overlooked, for there is one hoar-frost scene that it would not be possible to render more perfectly.

"The Love Letter" has been treated by A. Burchett in a manner that is well within the resources of the photographic art, and the result is a great success. The model is graceful and sympathetic, and she has done her part well, for the pose is easy and unstudied. Simplicity of treatment pervades the whole picture. The texture of the drapery is technically perfect, but it does not obtrude itself into notice for all that, and the background does its part in producing harmony throughout the entire picture, which is a worthy successor to "The Knight," exhibited last year by the same gentleman.

E. Lambert has become an executioner with a vengeance with his "Five Studies of Heads." Poor young ladies! What had they done that they should be taken direct from life, even with the aid of a single landscape lens? There they are, all five of them, decapitated and hooped in by circles that will only just contain their heads, and to make matters still worse they are touched to death afterwards.

The portrait of Herbert Sims Reeves by Douglas Pym, is another striking example of the misuse of the retoucher's pencil, for all the lines of manliness have been removed, and in consequence the head is extremely effeminate. A lesson might be taken from the portrait of Professor Herkomer, by Gabell and Co. This picture is perhaps the best example of portraiture in the gallery, for the pose is so easy and unstudied, and the expression full of character; but the point to which we wish specially to draw attention is judgment displayed by the artist when manipulating the negative, for there is no evidence of serious work upon it at all; that is to say, laboured dotting and hatching, which is the curse of modern photography, is apparently conspicuous by its absence. It is true that there is a little work with chalk upon the print, but there is no attempt to disguise it, and on the face it is only used here and there, not to obliterate lines, but to soften down a little crudity in the lights. Contrast this face, which is almost rugged with its life and vigour, with a few of the smooth lifeless productions near it, and surely a most profitable lesson may be learned.

Seymour Conway's Lake subjects are full of light, and that is something to say when the craze just now is to depict nature in her more gloomy moods. In one or two the sky is too light, but in one called "After the Mid-day Meal" the clouds are shown dropping down over the mountain tops. E. Benson's Westmoreland subjects, like those above mentioned, are well selected, and show photographic work of a high character.

The charming little lady who occupies such an exalted position on the walls at Pall Mall is an effective specimen of child portraiture by W. M. Warneuke, and has helped him to a medal.

J. A. Rivington has been most ambitious in his efforts at picture-making, but he has scarcely been successful. He has prepared his Egyptian accessories and background after such great archæological research, that the beholder is so busy with the task of deciphering the hieroglyphics, that he overlooks the fact that the great "Cleopatra" is before him. She has prepared for her journey to northern shores, for though she has retained her Egyptian headgear, she has put aside her diaphanous drapery appropriate to the banks of the Nile, and in addition to some good thick drapery, has put on one or two extra petticoats in order to be well protected against the ruder climate.

H. W. Bennett has some successful seascapes, the best of which are "A Stiff Breeze" and "Coming Home." The "Views in and around Venice," by G. W. Tyser, also deserve notice. "Sunset on the Wey" is one of the best pictures produced by T. M. Brownrigg for several years past, for there is a breadth of light and shade not usual in this gentleman's productions. His work is always technically good, but he is now on the right artistic track, and has only to proceed boldly in order to score still greater successes. A. W. Gottlieb has obtained such a beautiful purple bloom on his "Bunch of Grapes" that they look most tempting.

Gabell and Co. are certainly most successful in portraiture, and the picture of "Miss Eva Moore" is quite free from the ordinary conventionality of the portrait studio. Special note should be taken of the projected shadow of the head on to the background. The portrait of "Miss Eruthea Halse" should not be overlooked, for the pose is strikingly fresh. This is the sort of work to raise the status of photographic portraiture.

The Autotype Company exhibit a number of enlargements which are, perhaps, superior to the work of past years. A Grecian study shows the importance of looking after trifles. A young maiden in Greek costume is performing on the double flute. The operation is a difficult one without doubt, but surely the difficulty is increased when the holes of one of the flutes are turned downwards and the young lady's fingers are actively occupied on the bare part of the tube. This glaring error probably scarcely shows in the small negative, but in the enlarged picture it is far too palpable.

Maroon flock mounts ought to be relics of a barbarous age; a few still remain, however, but after this year's experience it is to be hoped they will be seen no more. The portraits are so peppered all over by the flock dust that the quality of Mr. J. Byrne's work really cannot be properly seen. This is sorry consolation to the exhibitor immediately below, for the beautiful series of hand-camera pictures are so overpowered by the maroon-flocked frame with its many openings, that their exceptional merit will be overlooked by a large majority of the visitors to Pall Mall. These little gems are by W. Thomas.

W. C. Beetham's "Haunt of the Moorhen" and "At Work by the River" are both capital pictures. The first is a landscape without figures, and the balance of light and shade very artistic. At a distance the line of shade made by the trees on the right is too straight and formal, but this defect is not so apparent when near enough to properly judge the picture. Masses of light and shade are always best judged in a dim light or from a distance. This is well known by artists, and should be equally well known by photographers. In the second picture there is life and action. Men and horses are at work on the bank of a stream. The pose of the lad near the foremost horse is very unconstrained and natural, but the man a little further off is evidently looking at the operations of the photographer. The whole group, however, is bold and striking.

C. Court Cole, in his picture called "Evening," has produced an extremely fine work. An unusually beautiful evening sky is reflected in a mirror formed by shallow water, but broken here and there by mud or wet sand. As a picture it might have been perfect but for one grave fault. A boat is placed exactly under the sun and so disturbs the harmony that the beholder feels vexed he is unable to move it a little to the right or left, and so get it into the right place for a perfect effect. It is an illustration of the limitations of photography, for a painter would have moved it out of the way at once, but the photographer is powerless, and therefore it must remain where it is—a blot in an otherwise very beautiful picture.

F. Whulley has made a bold attempt in his pictures called "Worn Out," and there is a great deal in it to commend itself to notice. The subject is a painful one, and beyond the province of photography. A sick child is asleep, and the tired-out father, who has been watching by the bed-side, has dozed off, for the newspaper has dropped from his listless hands. The candle has been screened from the eyes of the sleeping child by a book, and dawn is creeping through the small lattice window. In such a scene the light and shade would be strongly accentuated, but in the present picture the light from the candle plays no part, and that from the window very little indeed. The picture is really lit by a subdued studio light. The pose of the sleeping man is very natural, and the picture has been well thought out; but still it must be regarded as yet another illustration of the limits of photography.

The Canterbury Cathedral interiors by T. H. Morton are very successful, and there is great freedom from halation in most. The one of the crypt is the finest we have yet seen of this most striking subject

Harry Tolley's "Christmas Time" is worthy of his reputation as an artistic worker. The scene is a lane in winter, and there are dark trees covered here and there by snow. Human interest is given to the scene by the group of sportsmen with their guns and dogs; and at least one of the party is well loaded with game. A lesson may be learned by comparing two views of Calder Abbey, Cumberland. The one by Mr. Tolley at once strikes the eye as a very artistic production. The dark masses of trees on the right, and their long shadows, are contrasted by light trees in the middle distance, whilst

the arcade of ruined arches, with the alternate play of light and shadow upon them, gives distinctive character to the scene and helps to complete the artistic composition of the picture. The other view of Calder Abbey, by S. Bourne, is quite an uninteresting picture, and not likely, therefore, to attract much attention.

J. A. Hodges has several artistic pictures on the screens, but the two best are very badly placed. The one called "Twilight" is an artistic gem, which, fortunately, we had seen before. It was one of the most striking pictures in the collection shown by the members of the West London Society last winter, and on that occasion gained an award. On the back of one of the screens it cannot possibly be seen, and might be called "Night"—midnight, in fact. "Home before the Storm" is more fortunately placed. The effect of the shadows of the boats on the wet sand is striking, and the black cloud gives warning of bad weather.

The nigger newsboy "Counting up his Profits" is a very effective picture by H. S. Harmon. There is great simplicity of treatment, and the picture explains itself without need of title. The boy is leaning against a wall on which the shadow of his head falls with striking effect. Of course, he is very busy turning over the coppers with great care.

"The Village Cobbler," by G. A. Nelson, furnishes a homely subject, and the scene is not overdone with accessories, whilst the chiaroscuro is simple and effective. A piece of the right-hand corner, however, might be cut away with distinct advantage, for it would help to concentrate the interest. The picture of reapers by the same gentleman is another illustration of striking chiaroscuro, and the strong side light has been used with great effect.

M. J. Harding's picture called "A Mountain Stream" depicts a shallow boulder-strewn river, and the point of view has been well selected for artistic effect.

F. Muller exhibits two sets of cabinet portraits, admirable in pose and delicate in lighting. The most striking thing about them, however, is the grace and beauty of his lady models, and their natural yet animated expression.

In J. B. Obernetter's landscapes there is a striking absence of black shadows, and they speak well for the good printing quality of the Obernetter paper. They are besides very artistic in selection, and quite hold their own against similar English work.

The auto-gravure work by the Autotype Company shows distinct advance, and though the picture which has taken the medal is of considerable dimensions, there does not appear to be much after-work with the graver, and this cannot be said of the pictures in the immediate vicinity done by other workers. Mont Blanc, taken at a distance of fifty-six miles by Dallmeyer's telephotographic lens, attracts a great deal of attention. It certainly is a wonderful production, and F. Boissonnas well deserves the medal given for his very remarkable photograph.

The examples of the Woodbury gravure process well demonstrate its capacity for book illustrations.

In conclusion it may be said that the Exhibition of 1892 presents no startling innovations, but the average of the work sent in is distinctly higher. There is a strong tendency to forsake Nature in her gayer and brighter aspects, or where these are depicted to considerably lower the key, and so take out much of the light and gladness. The more sombre mood, however, is selected by preference by the advanced school. This is all very well, and the effect of their work may be productive of good in the future; but we hope fashion will not run mad, and that there may be determined workers for the advancement of the art side of photography who will not hesitate to grapple with Nature in her gladdest mood.

There is greater variety of colour in the prints shown this year than perhaps ever seen before, and though the examples on albumenised paper are very limited, both bromide and platinum prints have departed mainly from the cold grey of former years, and offer a great variety of tints. We are pleased to see carbon so much to the fore, and hope next year to see it improved backwards—that is to say, to the beautiful black shown in the illustrations to the first edition of the manual issued by the Autotype Company. The print referred to is from a negative by the late Robert Faulkner, and is in our estimation something for the photographers of to-day to live up to.

Rough paper has been used with striking effect by those who know how to use it, but there are several examples where it has been most woefully misused. It is to be hoped, however, that the unfortunates will profit by their failures. The great object of the Exhibition should be, not profit, but education for the whole photographic community, and by a careful examination of this year's pictures each one may learn something.

PORT ELIZABETH (CAPE OF GOOD HOPE) AMATEUR PHOTOGRAPHIC SOCIETY.

The first annual exhibition and entertainment was held on September 8th, and the proceedings were opened by the President, Mr. A. Walsh. Vocal and instrumental music was given at intervals with comic recitations. During the evening a negative was taken by flash light and developed in the lantern, a slide also being made in the same way. Considerable interest was shown in the fine collection of picture exhibits, and a series of lantern slides were also shown. From all reports the South African society is in a very strong and flourishing condition.

BEDFORD AND DISTRICT CAMERA CLUB.

At the exhibition of this society, held on the 11th, 12th, and 13th inst., the judges, Messrs. Pringle, Cembrano, and Rev. F. C. Lambert gave the following awards:—Class I., bronze medal, withheld; certificates, J. E. Austin and Rev. V. Macdona. Class II., medal, J. E. Austin; certificate, Geo. W. Ramsay; certificate, withheld. Class III., medal, withheld; certificates, T. B. Judson and Rev. V. Macdona. Class IV., medal, A. Tagliaferro; certificates, J. E. Austin and J. W. Evans. Class V., medal, J. E. Austin; certificate, withheld. Class VI., medal, G. W. Ramsay; extra medal, P. Ennis; certificates, J. W. Evans, J. E. Austin, and C. E. Cowper. Class VII., medal, A. R. Dresser; certificate, withheld. Class VIII., medal, A. R. Dresser; certificate, J. H. Gear. Class IX., medal, J. H. Gear; certificate, G. W. Ramsay. Class X, medal, A. R. Dresser; certificates, C. H. Davis and J. Samuels. Class XI., medal, Miss Mothersill; certificates, Miss Perrott Smith and Miss F. Talbot. Class XII., medal, Master Aubrey Rogers; certificate, Masters W. M. Vandeleur and Basil Macdona. Class XIII., silver medal, A. R. Dresser; bronze medal, G. W. Ramsay. Series of lantern-slides each evening—by Andrew Pringle, "The Alhambra;" the Rev. Albert Macdona, "Norway and the Fjords;" and the Rev. V. Macdona on "Italy and Rome." The committee are to be congratulated on having made both a financial and general success, though considerable dissatisfaction is felt that many well-known workers sent in medalled pictures in other classes than that set apart for the same. Somebody has been rude enough to ask if this is pot-hunting?

STOCKPORT AMATEUR PHOTOGRAPHIC SOCIETY.

The exhibition, which is the first inaugurated by the society, but which it is hoped to make an annual affair, is a very comprehensive one, and the pictures include examples of almost all the processes of photography extant. The Mayor of Stockport (Lieut.-Col. Turner, J.P.) does his own enlargements, and, generally speaking, they are splendidly executed. One of his finest pictures on view is King's College, Cambridge, the detail in which is capitally reproduced. His other works include "Hougomont Farm," "Grindelwald," scenes in Altdoof and Lucerne, Adlington Park, and the river Cam, also a splendid specimen of statuary photography—the Lion of Lucerne. A view of the Stockport cricket pavilion is a very good enlargement. Mr. Oliver Coppock is represented by a lot of really artistic work. He makes a speciality of animal studies, and in this connection the "Lion at the Zoo" is perhaps his best production. How Mr. Coppock has succeeded in obtaining such an admirable view of the lion and has managed to obviate focussing the bars of the animal's cage is a matter of wonder. "The Elephant" at the Zoo is also a first-rate enlargement. Mr. Coppock has also a few effective specimens of landscape work, including views from Grange. Mr. H. N. Cooper has just been awarded the Bronze Medal presented by the AMATEUR PHOTOGRAPHER, and his pictures are indeed beautiful works of art. Mr. Cooper's photographic inclinations seem to tend mostly in the direction of marine views, and he has some excellent examples. Among the best of his instantaneous views are three or four photographs of yachts at sea, the light and shade being perfect, and a little boy laughing, the expression of which is admirable. The training ship *Indefatigable* is another marine view. "The Thames by Moonlight" is a clever production, the sky effects being exceedingly good. Three cloud pictures by Mr. Cooper are also very fine. In addition to his more ambitious efforts, Mr. Cooper has on view a number of stereoscopic pictures of good quality. Mr. B. S. Harlow, the energetic Hon. Secretary of the Society, has done some very effective and carefully taken views. Several scenes at Morcton Old Hall, near Congleton, are reproduced with excellent effect, some of the interiors being marked by very great delicacy. His platinotype, "Farm Work," also makes a pretty picture, Mr. Harlow has in addition some excellent views of Liverpool shipping. Mr. George Hidderley is well represented. Perhaps his most attractive exhibits are a number of miscellaneous views from Wales, Switzerland, Holland, and Belgium, also figure studies. Mr. T. Kay, J.P., the President of the Society, has not any pictures in the exhibition. The department to which Mr. Kay pays most attention is the production of lantern slides, a series of which, illustrative of Greece and Athens, will be exhibited next week. Mr. S. Kay, judged by his examples, is a very painstaking photographer. He is represented by a frame of about 60 views, mostly landscape. Mr. H. J. Heginbotham's views are mostly taken from the neighbourhood of Marple, and include the Aqueduct and the Goyt. The latter river scene is a very nice, soft picture, distance and the shadows being excellently reproduced. Mr,

W. Scott has enlargements of "Menai Straits"—a very delicate work—"Llanberis," "On the Goyt," and "Bramall Lodge." Mr. T. Bedford has an attractive set of enlarged photographs, which comprise "The Packet House" at Worsley, and others. He has also a collection of smaller views of Moreton Hall and Miller's Dale. Mr. C. Dawson has a view, the only carbon prints in the exhibition—"Ashford in the Water," and "Mill at Rossett"—both of which are strikingly effective pictures. Mr. Dawson is also represented by a mount of snapshots and several half-plate pictures. Three very good enlargements from Mr. T. Clayton's negatives of Douglas, Port Erin, and Conway Castle are characterised by splendid colour. Mr. E. F. Ward has on view some very pretty half-plate landscapes, which are highly creditable, especially when it is considered that Mr. Ward is one of the most recently enrolled devotees of the art. Mr. J. Bailey is represented by a number of well executed half-plate landscapes, chiefly Irish, carefully finished in every detail. Mr. G. H. Broome's views of Adlington, Bolton Abbey, and Derbyshire are very attractive. Mr. W. B. Leigh has on view a number of half-plate landscapes of Devonshire. The only examples of machine photography are sent by Mr. Cephas Froggatt, jun., and represent the Palmer Mill engines. The detail is first-class and the views are an admirable pair. Mr. Froggatt has also some smaller pictures of landscapes. Mr. F. Clayton, Mr. G. Ball, jun., and Mr. J. H. Beech also send frames of interesting studies. Mr. Joseph Froggatt has one or two interesting whole-plate pictures representative of English sports—football, cricket, and bowls—besides which he has a frame of views from Haddon. Mr. T. W. Aveyard is represented by a series of Derbyshire views. Mr. Harry J. Robinson's sets of landscapes, taken principally in the Isle of Man and the Isle of Wight, are admirable works. Mr. R. Venables has some carefully finished half-plate prints of good tone. Three frames of quarter-plate prints, sent by the Mayor, in addition to those already mentioned, occupy a prominent position in the exhibition. Mr. J. Jepson has on view some first-rate architectural enlargements, and a number of stereoscopic transparencies by Mr. James Needham are interesting exhibits. Some time ago a determination was formed by the members to make a photographic survey of the town, but only three members—Messrs. H. Robinson, Cooper, and Harlow—have sent in views. Some of them are excellent character studies. The following gentlemen have acted as a hanging committee, and in their work have displayed much taste:—Messrs. G. Hidderley, O. Coppock, H. N. Cooper, and B. S. Harlow. Each evening at 8 o'clock there is to be an exhibition of lantern slides (prepared by the members) by the aid of the oxy-hydrogen lantern. The syllabus comprises views of Switzerland, etc. (the Mayor), Isle of Wight (Messrs. W. B. Leigh and H. J. Robinson), Greece and Athens (Mr. T. Kay, J.P.), and miscellaneous collections (Messrs. H. N. Cooper, O. Coppock, H. D. F. Dobson, and other members).

Mr. F. E. Ives, of Philadelphia, has sent us a circular about his heliochromoscope, which he now offers with six chromograms and special lamp for night illumination at 50 dollars. Extra chromograms may be obtained at 10 dollars the dozen.

Photographers' Benevolent Association.—A committee meeting was held on October 7th, in the rooms of the Photographic Society of Great Britain, Mr W. Bedford in the chair. The minutes of the last meeting were read and confirmed, after which the Secretary reported that since the last meeting he had received intimation through Mr. Bedford of a legacy of £52 10s., left to the Association under the will of the late Mrs. Emma Mary Evans. Subscriptions had been received from four new members, and small sums from two collecting boxes. One case of distress had come before the Association. The applicant stated that he had been for twenty years a photographic printer, that his last employer had been obliged to discharge a portion of his staff through decreasing business, and that he (the applicant) had been three months out of work, and with his family was on the verge of poverty. He gave four references, including his last employer, and covering about fifteen years' situations. He asked for assistance in finding a situation, or a grant of money as a temporary relief. The Secretary had made inquiries from three of the references, all of whom gave the applicant an excellent character, and failing to find for him a situation, as a printer, recommended him for a different class of situation, which he obtained. On the proposal of Mr. Mackie, Mr. R. Child Bayley was elected a member of the Association, and Mr. H. W. Watts, Rangoon, Burmah; Miss Catherine Weed Barnes, New York; and Messrs. John Lewis and F. Gillard, both of Birmingham, were elected on the proposal of Mr. H. Snowden Ward. The arrangements for the lantern evening at the P.S.G.B. were fully discussed. The arrears of subscriptions were considered seriatim; various members undertook to personally wait upon certain subscribers, and the Secretary was instructed to write to the remainder.

AFFILIATION OF PHOTOGRAPHIC SOCIETIES.

FOURTH MEETING OF THE DELEGATES, held on the 11th inst., at the Rooms of the Photographic Society of Great Britain, Mr. Mackie (North London Phot. Soc.) in the chair.

The Chairman announced the business of the evening to be the arrangement of a winter programme, but there was also upon the agenda the appointment of a working committee.

Mr. P. Everitt (London and Provincial Phot. Asso.) inquired if that had not been arranged at the last meeting, and the extract from the minutes was read, recording that it was deferred.

After some remarks by the Chairman, Mr. Marchant (North Middlesex Phot. Soc.), and Mr. Golding (Holborn Cam. Club), it was decided that the matter be deferred.

The Assistant-Secretary announced that a set of slides for circulation had been received from the Leeds Photographic Society, and sets promised from the Hull, Lancaster, and Madras Societies. The North Middlesex Society had also offered for circulation papers on "Gelatino-chloride of Silver Paper and its Manipulation," by Mr. J. C. S. Mummery, and "Notes on Landscape," by Mr. Pither.

Major Bruno (Southsea Phot. Soc.) stated that he was authorised on behalf of his society to offer a set of slides, and the offers of slides were accepted with thanks.

Mr. Everitt suggested a course of lectures on photo-mechanical processes, and after some remarks by the Chairman, Messrs. Clifton (Phot. Club) and Marchant, it was resolved that arrangements be made for a series of technical lectures, to be held, if possible, at 50, Great Russell Street, on some branch of photo-mechanical printing, and that a committee of three members be approved to make inquiries as to the best means of carrying it out.

ADJOURNED MEETING OF DELEGATES, held at 50, Great Russell Street, Friday, the 14th inst., Mr. W. Bedford (P.S.G.B.) in the chair.

Mr. Marchant called attention to the fact that there were no rules as to the calling of meetings of delegates, and thought the scheme ought to be put on a business footing, and suggested the appointment of a Chairman with power to call meetings and to be responsible for the agenda.

It was proposed by Mr. Everitt, seconded by Mr. Marchant, and carried unanimously, that Mr. Bedford be appointed chairman with power to call meetings and arrange the business.

The Chairman thanked the meeting for such an expression of confidence, and called on the delegates to resume the discussion left unsettled at the previous meeting, viz., the appointment of a committee to carry out the proposition as to technical lectures.

Mr. Warnerke (P.S.G.B.) stated he felt sure the parent society would regard this proposition in a sympathetic manner, and after some remarks by the Chairman, Messrs. Everitt, Mackie, Cox (North Middlesex Phot. Soc.), and Clifton, it was decided that the committee consist of the Chairman (*ex-officio*), Messrs. Warnerke, Marchant, and Everitt.

The Chairman referred to a circular that had been received from the International Union of Photography, the object and present position of which Mr. Warnerke explained.

A question was raised as to whether an affiliation of societies could join such a union, and after some remarks by the Chairman and Mr. Cox, Mr. Warnerke promised to obtain further particulars.

The Chairman asked if it were possible to obtain for circulation the lantern slides sent in to the Pall Mall Exhibition, and the Assistant-Secretary was instructed to see what could be done.

Mr. Zachariasen (Putney Phot. Soc.) proposed that tickets should be printed to be issued to all members of affiliated societies, to act as proof to the fact that the holders were members of an affiliated society, but, after a discussion, in which Messrs. Mackie, Clifton, and the Chairman joined, it was determined to obtain a stamp, and that the secretaries of the societies should be invited to send their ordinary members' tickets to the Assistant-Secretary to be stamped.

The Assistant-Secretary announced that at the present moment the papers, etc., at the disposal of the societies were as follows:—1. "Photogravure," by Mr. A. Dawson, with examples by various firms. 2. "A proposal for a National Photographic Record and Survey," by Mr. W. Jerome Harrison, F.G.S., with examples by the Birmingham Photographic Society. 3. "Photography applied to the Detection of Crime," by Dr. Paul Jeserich, illustrated by lantern slides. 4. Set of sixty Indian and colonial lantern slides. 5. Set of seventy-one lantern slides of Yorkshire scenery, by the Leeds Photographic Society. 6 Set of lantern slides by the Hull Photographic Society. 7. "Gelatino-chloride of Silver Paper and its Manipulation," by Mr. J. C. S. Mummery. 8. "Notes on Landscape," by Mr. F. L. Pither. 9. There was also an offer, of which several societies have availed themselves, by Mr. W. E. Debenham, to demonstrate either "Transparencies by the Carbon Process, or Collodio-bromide."

The meetings were adjourned.

Societies' Notes.

THE report of the Richmond Camera Club to hand shows evidences of good work and a satisfactory balance. The meeting night is now altered from Friday to Monday, and for the future the Greyhound Hotel will be the locale.

Sir Albert K. Rollit, M.P., will open the Hackney Society's exhibition on Tuesday, November 15th, at 4 p.m. Messrs. Elliott and Sons' fine wave study will, at the close of the Pall Mall show, go to Hackney. Entries close October 28th.

Lady Brooke will open the Leytonstone exhibition on November 10th. Both Lord and Lady Brooke are amateur photographers.

The Cornish Camera Club will hold an exhibition of members' work at Penzance, which will open on December 5th.

The Chiswick Camera Club and the West London Photographic Society have amalgamated, and the official title for the space of one year will be "The West London Photographic Society, with which is amalgamated the Chiswick Camera Club."

The Brighton and Sussex Natural History and Philosophic Society are holding a series of competitions for members' work. Silver and bronze medals and certificates will be given away.

Stanley Show Photographic Exhibition will be held at the Agricultural Hall, Islington, from November 18th to 26th inclusive. Fifteen medals, including five gold, have been placed at the disposal of the judges, Messrs. Traill Taylor, H. Sturmey, and A. Pringle. Classes:—(A) Instantaneous Cycling Subjects, sets of four; (B) Instantaneous General Subjects, sets of four; (C) Landscape or Seascape (with or without figures); (D) Lantern Slides, sets of six; (E) Pictures by Platinotype Process, any subject. Classes A and E are open; B, C, D, open to amateurs only. In C and E the medals being for single pictures, they should, if possible, be framed separately. Three medals in each class (gold, silver, and bronze) will be placed at the disposal of the judges for artistic and technical excellence. Diplomas of merit will be awarded for sufficiently meritorious pictures not gaining prizes. The entrance fee for any one class is 2s. 6d., or an additional fee of 2s. 6d. will entitle a competitor to enter for any or all of the other classes for which he is eligible. Entries close November 7th. No competitor will be allowed to exhibit more than twelve pictures in each class. Duplicate prints of prize-winning pictures are to be furnished to the Stanley C. C. The Committee will be very glad to receive pictures for exhibition and not for competition—such as medal pictures—(which cannot compete) or pictures illustrating particular processes. No charge for entries for such pictures will be made, but must be marked "Not for Competition." All work (except mounting and framing) must be done solely by the competitor. No competitor to take more than one medal in each class. No prize pictures to compete. *Regulations*:—Photographs: Each competitor must fill up the entry form supplied, and send it with the entrance fee to Herbert Smith, 29, Finsbury Pavement, E.C. All pictures must be mounted and framed. At the back of each picture must be written the name and address of the competitor, the number to which it refers in the entry form, and the class for which it is entered. A card must also be sent with the picture bearing the name of the competitor and the title of the picture. Name must not appear on the picture. Cards and labels will be supplied on receipt of entry. Lantern Slides: All slides must be of the ordinary size ($3\frac{1}{4}$ by $3\frac{1}{4}$) and properly marked at the two corners for the lantern; each slide must bear a consecutive number, which number, with the title against it, must appear on the entry form. Competitor's name must not appear on the slide. For further particulars see advertisement page.

The second annual exhibition of the East London Photographic Society, interspersed with vocal and instrumental music, will be held on Monday and Tuesday, October 24th and 25th, in the Lecture Hall of the New Tabernacle, Old Street, E.C. (near Town Hall). The judging will take place on Tuesday. Apparatus from the leading photographic firms will be shown. Tickets of admission, 6d. each, may be had of the Hon. Secretary, Mr. A. Wilkinson, 28, Shacklewell Lane, Kingsland, or any member of the society.

Mr. V. T. Gilmer, Manchester Buildings, Cannon Street, Birmingham, writes to us with regard to the formation of a new photographic society for Birmingham:—"Allow me to inform your numerous readers that a society for the promotion of photography amongst working men has been formed. Those who wish to avail themselves of the many facilities offered by the society kindly send in their names as soon as possible. The annual subscription fee will be 5s."

Societies' Meetings.

Ashton-under-Lyne.—The weekly meeting held on the 13th inst. was devoted to an exhibition of members' lantern slides. Mr. J. W. Kenworthy presided. Although during the evening rain fell in torrents, about eighty members put in an appearance (including ladies). 266 slides were thrown on the screen, and the results show a very marked improvement on those of last year. The slides all round were of very good quality. The following members exhibited:—Messrs. Hodson, Turnbull, Platt, Hampson, Gill, Kenworthy, Dean, Lord, W. Marsland, Walter Chadwick, Wm. Chadwick, T. Chadwick, Cheyne, Hollingworthy, Glazebrook, and Hutchinson. Mr. R. T. Marsland worked the lantern (oxy-hydro.)

Birkenhead.—The Council considered the AMATEUR PHOTOGRAPHER Prize Slides worthy of special arrangements. They therefore engaged the large hall of the Y.M.C.A. last Thursday, and filled it with members and friends. The lantern was in the hands of Messrs. Archer and Sons, of Liverpool, and the slides were greatly admired. Mr. G. A. Carruthers, the President, was in the chair. During the evening the inevitable "funny man" distinguished himself as usual. It was when the portrait of one of the American competitors was on the screen—a gentleman with a head of hair of which any German musician would be proud—that four shrill notes reverberated through the hall. Not a word was said. The whistle expressed it perfectly, "Get your hair cut"!

Birmingham.—Ordinary meeting held on 11th inst., Mr. G. A. Thomason in the chair. Mr. U. B. Osborn read a paper on "Forgotten Processes, and Self-help for Amateurs." Mr. Osborn, during the course of his very interesting paper, described and illustrated some simple methods of making focussing cloths, various kinds of shutters, single and double dark-slides, dark-room and travelling lamps, a capital method of printing stereoscopic pictures which avoids the necessity of cutting and transposing the prints before mounting, and also many other things of interest to the amateur photographer. An extremely simple carbon printing process, invented about forty years ago by the late Mr. Pouncey, was very fully described. Mr. Osborn said he believed that the details of the process had never before received publicity. Several very beautiful prints made by the inventor of the process and by Mr. Osborn were exhibited. A plate washer, made by Messrs. Smith, of Leamington, was shown. The AMATEUR PHOTOGRAPHER Competition Prints were shown, and attracted a considerable amount of attention.

Bolton.—In connection with the Bolton Photographic Society an exhibition of slides was given on the 11th inst. by Mr. W. Banks, the occasion marking the commencement of the winter session. There was a good attendance, composed chiefly of those interested in the congenial pursuits of the photographic art and their friends. The slides exhibited were the present season's by some of the largest firms of photographers in the country, such as York, Valentine, Wilson, etc., and also by members of the Society, and as each in turn was thrown on the canvas by the means of a powerful oxy-hydrogen light they proved to be a very artistic collection. Some views in Iceland were exceptionally good, as also were those of the Rocky Mountains. Other excellent views, taken on a yachting cruise round the coast of Scotland, came in for much admiration, whilst for the edification of the younger portion of the audience some diverting pictures were exhibited. Dr. Barr and Mr. J. S. Roscoe, members of the Society, lent a number of slides, dealing principally with local views. It may be added that the weekly photographic tours carried out by the members during the recent summer have been very successful, and there is to be a general exhibition of members' work at the rooms in December. Papers and demonstrations have been promised for every meeting during the winter months, which will no doubt be both attractive and beneficial to the members.

Burslem.—Monthly meeting held on 11th inst., Mr. E. B. Wain President, in the chair. A full attendance of members; one new one elected. A number of negatives and prints, the work of members during the last month, were handed round and criticised. Several negatives were exhibited which had been developed with Amidol, which had given very satisfactory results, the general opinion being that it was a most vigorous developer; but it was thought that the formula for developer required some amendment when used for lantern slides, as it gave a little veiling. One of the members exhibited a print from a negative which was made of an ordinary and Sandell plate fixed together in the slide, and exposed at the same time, and developed and printed together. The contrast between the two plates was very marked, the fine detail of the subject being much more finely rendered by the Sandell plate. A print was also shown which had been taken on a Swan 5-times plate, which had been kept for ten years before exposing and developing; it gave a perfect result. Mr. A. Shorter, a member who has recently returned from a visit to America, gave a very graphic and interesting lecture descriptive of his journey, which he illustrated with a number of lantern slides, many of which were from his own negatives taken

on the journey. The series included views of every description, some being on board ship, others in New York harbour, and concluding with some very fine slides of Niagara and the Falls. The meeting concluded with the exhibition of lantern slides recently made by members.

Chiswick Camera Club.—The first half-yearly general meeting was held on the 10th inst. The chair was taken by Mr. R. W. Watson, and the Honorary Secretary and Treasurer, Mr. H. Harding Miller, read an interesting report, showing a large amount of useful photographic work, accomplished since the formation of the club in December last. The report showed that many meetings had been held at which papers were read on various subjects. Excursions had been arranged during the summer months, and the club room had been open on Monday evenings for the use of members, when many scientific discussions had taken place, and much increased interest in the art of photography had been evoked amongst the members. A photographic competition had been held, and silver and bronze medals had been awarded to Messrs. G. S. Bigland and H. Rene Rainger; the best pictures (as kindly judged by the Editor of the AMATEUR PHOTOGRAPHER), the interior of St. Paul's Church, Grove Park, Chiswick, and a view of Richmond Bridge. A balance-sheet was presented, and the officers were re-electedas follows:—Chairman, R. W. Watson; Committee, Messrs. G. Gentry, L. J. Hunt, H. Rene Rainger, A. E. Stedman; Hon. Sec. and Treasurer, H. Harding Miller ("Parkia," Chiswick). The Chairman in the course of his remarks referred to several proposals which had been made by the West London Photographic Society to this club for amalgamation, which had been dropped by them on two occasions, but which were now again being renewed, and apparently with a better prospect of success, which if agreed to will be announced in due course.

Cromwell.—On Monday evening, the 10th inst., the first annual meeting of this flourishing club was held. There was a good attendance, Mr. H. Pechey occupying the chair. Although no report was read, enough was said to show that the society has enjoyed its share of success during the past year, and, moreover, has done much to encourage the use of the camera, by means of outings, lectures, papers, etc. The number and enthusiasm of its members show conclusively that it has opportunely filled a vacant space in local society, and on these facts we heartily congratulate the club. The Hon. Sec. (Mr. Chas. Rumbold) read a letter from Dr. Bately, regretting his inability to be present, and also resigning his position as Vice-President. The election of officers was then proceeded with. Dr. Batcly's resignation was not accepted, and he was unanimously re-appointed as one of the vice-presidents for the ensuing year. Miss V. Buxton was also re-elected a vice-president. The Hon. Treasurer (Mr. T. W. Swindell) and the Hon. Sec. (Mr. C. Rumbold) were also again voted to their respective offices, while the following gentlemen were elected to the committee:—Messrs. John Starling, J. J. Owles, A. Price, G. Waller, jun., T. Goate, J. R. Ellis, G. Rumbold, H. Pechey, and E. G. Leach. It was decided, on the motion of Mr. Blyth, that a dinner in connection with the club, be held on a Tuesday in November next at the Cromwell Hotel. The next monthly meeting to be held on November 14th was decided to be a lantern night for the purpose of exhibiting members' slides of work done during the summer outings.

Derby Phot. Soc.—The first meeting of the winter session was held on the 11th inst., a large number being present. The first business was the election of officers for 1893, which resulted as follows:—President, Captain W. de W. Abney, R.E., F.R.S., etc.; Vice-President, Mr. Richard Keene; Committee, Messrs. G. Walker, T. Scotton, C. B. Keene, A. H. Bennett, R. Woods, C. Bourdin; Treasurer, Mr. A. B. Hamilton; Hon. Sec., Mr. T. A. Scotton, 9, Church Street, Derby. It was decided to hold an exhibition of members' work in January, 1893, and the medals which will be awarded in the outdoor meeting competition to be presented on this occasion. An exhibition of lantern-slides made by the members was also held, about 120 pictures being passed through the lantern. Votes of thanks to Mr. Keene for presiding, and to Mr. A. Scotton for managing the lantern, were passed, this concluding a very interesting evening.

Dewsbury.—The members held their first lantern night on the 13th inst. Mr. S. Mitchell manipulated the lantern, which he had brought with him to the meeting, and to which he had added a bellows arrangement. A nice collection of slides were put through the lantern, the work of the members, and which gave much credit to the members for their excellent quality. It was decided to have a members' lantern evening at the next meeting, November 10th.

Durham.—The first indoor meeting of the Durham City Camera Club for the season was held on the 12th inst., Councillor E. White, Vice-President, in the chair. After the formal business, the Hon. Sec. (Mr. R. Hanxwell) announced that he had succeeded in compiling a good programme of meetings for the winter season, which will embrace papers and demonstrations on gelatino-chloride, carbon, and platinotype processes, enlarging, and several exhibitions of prize lantern slides. An exhibition was then given of members' holiday work by means of the limelight. The slides of inland scenery by Professor Pearce and Mr. G. W. Patty were much admired, the pictures of Swiss scenery by the President (Rev. H. E. Fox), and the hand-camera work by Mr. J. Mirson, and Mr. R. Hanxwell being especially worthy of mention. The Hon. Treasurer (Councillor W. Gray) ably manipulated the lantern. There was a good attendance and a most enjoyable evening was spent.

East London.—Ordinary meeting 11th inst., Mr. C. Tylee, Vice-President, in the chair. Before business for the evening commenced a parcel was handed to the Secretary, the contents of which agreeably surprised the members, it being in the form of a massive challenge cup of extensive dimensions, presented by Mr. C. T. Oliver (honorary member), of Hackney Road, N.E., for competition by members. A hearty vote of thanks was recorded Mr. Oliver for his handsome present to the society. Reports upon the Paget plates which were sent for distribution were received, and in each case they were very highly spoken of. Several negatives were handed round, the rapidity of the xxxxx extra rapid surprising many of the members with the favourable results obtained, having been exposed in a dull light with Newman's shutter, 1-100th sec. The P.O.P. sent by the Ilford Company being greatly approved of, there is not the slightest doubt but that it will be the principal paper used in our forthcoming exhibition. Samples of Amidol were distributed; the Secretary informed the members that he had developed bromide papers with it and obtained excellent results.

Edinburgh (View Finders' Club).—The annual meeting of this Society was held on October 10th at Mr. Hay's studio. The convener, Dr. Drinkwater, presented the annual report, which showed an increase in membership during the past session, and a very satisfactory financial condition. A proposal was made to alter some of the rules, and afterwards Mr. Hay showed some sketches and water-colours for criticism. Mr. Christie exhibited a print of a figure study mainly to show a novel feature in lighting.

Fairfield.—Ordinary monthly meeting was held on the 11th inst., the President (Mr. J. L. Mackrell) in the chair. After the election of sixteen new members, medals (the design of which called forth great commendation) were presented to Messrs. C. A. Timmins and H. Holt, and the presentation prints for the year, 15 by 12 platinotypes of Mr. W. W. Winter's "Look, Mama!" were distributed. Mr. Geo. E. Thompson, the demonstrator for the evening, was then introduced by the President amidst great applause from the large number of members and friends gathered. In the course of the evening he made six slides illustrating his subject, "Chloride Lantern Transparencies." The demonstration was, as is always the case when Mr. Thompson takes a matter in hand, a perfect success, and was highly appreciated by those present.

Glasgow High School.—The Rector having thought it advisable that there should be only one society in the school, at a combined meeting of the photographic and literary societies it was determined that they should be amalgamated. The photographic society shall now be known as the photographic branch of the literary society.

Hackney.—The usual weekly meeting was held on 11th inst., Mr. S. H. Barton presiding. Messrs. Self and Puttock were nominated for membership. The Chairman asked for papers on different subjects, the members to vote on what they wished most for. Being a lantern evening, the usual questions were curtailed, and Mr. S. J. Beckitt proceeded to give an account of his three journeys to Norway. About 150 slides were shown, and upon each Mr. Beckitt contrived to obtain some merriment. There was perhaps a little too much punning, one of which was a little too much for even the sedate Hackney men. "This," he said, "is a gorge outside the hotel, but is nothing to the gorge taking place inside." The lecture, however, was very much appreciated by a very much crowded audience, after which slides by the following members: Messrs. Carpenter (flower studies), Nunn, Hudson, Grant, Dean, Sodean, and Hankins.

Halifax.—On the 3rd inst a lecture was given by Mr. H. M. Smith, of the Eastman Photographic Company, on "Solio Printing." There was a moderate attendance of photographers, principally amateurs, to whom the lecture proved very interesting and instructive. Mr. J. I. Lcaroyd presided.

Herefordshire.—The following are the officers elected for 1892-93:—President, Mr. Alderman Blake; Vice-Presidents, Messrs. Alfred Watkins, T. J. Salwey, and J. Parker; Hon. Treasurer, Mr. W. E. Haines (High Town, Hereford); Hon. Secretaries, Messrs. J. Parker and E. G. Davies (Mansion House, Hereford); Council, Messrs. E. Pilley, E. W. H. Chave, R. Clarke, H. J. Wilson, B. C. Kinsey, A. C. Edwards, jun., W. C. Gethen, and C. H. Woodhouse. Headquarters, Mansion House, Hereford.

Holborn.—Mr. A. J. Golding in the chair. It was announced that the annual supper would take place at Anderton's Hotel on Saturday, December 3rd. Mr. A. Horsley Hinton read a short paper on "Accident and Intention." As his experience of photographic work and workers increased, he was bound to admit that his opinion as to their

honesty—the works, not the workers—was not improved, and he did not think the workers often erred on the side of excessive candour. If every successful photograph were conscientiously accredited to happy chance or accident, or, on the other hand, to deliberate and premeditated intention, he wondered which list would be the longer. How rarely was a *bad* picture attributed to the *real* cause of its failure? How often the unreproachful instrument, the weather, the light, or "those wretched plates" bore the blame? Their own judgment, patience, or skill, never! Or, if they pointed out that the picture would be improved if such and such a feature were not quite so central, they got the answer, "Quite so; I know that, but you see I only wanted it as a memento of the place, and didn't trouble about the picture." But, oh, the deceit of it! For, if the truth were known, the camera was carefully set up, and on the ground glass screen the subject was thought perfect and delightful, and not until the print was shown to a knowing one was the error noticed. And then there was the charming little bit of landscape which somehow comes out indistinct and fuzzy, and the critic's approval of the treatment was silently received, as though it were due to one's artistic motive instead of clumsiness in shaking the lens or stumbling over the legs during the exposure. The question at issue was that if it be guaranteed that most successful things were obtainable through mere chance—and whereas the results of chance could not be admitted as art—what evidence was there on the other side which would support the claims of photography as a deliberate means of artistic expression? If they were content to get a moderate number of plates which would win for them the admiration of their friends, they should set themselves the task of exposing a few gross of plates under fairly favourable circumstances, and they need have no fear of missing the desired end. But if they aspired higher, if their object was to attain the best possible, then they should not trust to the capriciousness of fortune and to chance. Besides, what disappointments always awaited the photographer who depended upon accident. He was convinced that opportunity plus accident, whilst it might furnish many successes, yet the same opportunity plus deliberate intention would, if the intention be the outcome of knowledge, yield a higher average and merit even if the successes were fewer. And moreover they would have failures (and because they knew what they intended, they would therefore know in what they had failed), which they would be able to turn to account and derive some useful lesson thereby. In that direction two lines of thought suggested themselves to him, which for the sake of being definite he would call "discrimination," or the knowing a good thing when they had it, and "application," by which he meant the faculty of turning the good to the best account. In both of these cases a certain amount of art knowledge was necessary, and important as was the selection of the subject, it was hardly more so than the exercise of the two faculties, "discrimination" and "application"—both of which, it might be noted, came into operation after the negative was made. In the discrimination and recognition of the good, the artistic ability of the photographer was perhaps first discernible. At one time and another it had been his lot, he might almost say his misfortune, to have passed through his hands parcels of photographs made by the most absolute tyros, photographs taken perhaps during a summer holiday of every description of subject. From amongst the collection there now and again appeared a gem, which from the rough and imperfect manner of its printing and mounting had evidently not been appreciated by its author. Had it not occurred within their own experience that on looking through a batch of old prints which they had long ago thrust on one side as of little importance, they had been surprised to find some picture which in the light of greater experience and knowledge seemed to be wholly satisfactory. How could they account for that singular inability to recognise the good? Was it because when they first made the print and then cast it aside, they were not in a mood or frame of mind responsive to its particular sentiment, or was it because they were deficient in a knowledge of nature, and the eye was not fully educated to perceive when a poetic aspect of nature was transferred or reproduced in the picture? In either case they had an accidental success, and if they could decide the cause of their failing to recognise it, and then cultivate their senses and faculties accordingly, their accident would have become a source of education to them, and would enable them not only to do, but to surpass by intention what was before effected by chance. That would be one phase of "application," but what he had in mind was rather the preservation of an unsatisfactory print by one process in order that they might ascertain what better could be done with the subject by a different method. Let the unsatisfactory print be an object of careful study, and endeavour to draw from it an explanation of its failure. By dodging, by shading, by cutting down, try to correct the evil, reluctant to the last to abandon it. Thus, out of their failure, also an accident, they might by deliberation come to a successful issue. An interesting discussion followed Mr. Hinton's paper.

Herefordshire.—The annual general meeting was held on 4th inst., when a large attendance of members were present, Mr. Parker in the chair. The balance showed £13 in hand. Mr. Thos. Blake was unanimously re-elected President, and Messrs. A. Watkins, T. J. Salwey, J. Parker, as Vice-Presidents; Mr. Haines was re-elected Hon. Treasurer, as were also Mr. J. Parker and Mr. E. G. Davies Hon. Secretaries. The Council consist of Messrs. E. Pilley, R. Clarke, E. W. H. Chave, H. J. Wilson, B. C. Kinsey, A. C. Edwards, jun., W. C. Gethen, and C. H. Woodhouse. The fixtures for the winter season were left to the Secretaries. It was resolved to purchase a Society album for the prints of members. The following was unanimously resolved, "That this Society accord their very best thanks to their worthy President, Alderman Blake, for the very efficient manner in which he had acted as President for the past year, and also for the handsome way in which he entertained the members of this Society to the 'Field Day' at Speech House in June last." A vote of thanks also to the Mayor for the use of rooms, the Editor, AMATEUR PHOTOGRAPHER, for judging the prints in competition, to the Editor, *Photography*, for sending lantern-slides, also to the Hon. Treasurer (Mr. W. E. Haines), and Hon. Secretary (Mr. E. G. Davies), for the way in which they had discharged their duties. Three lantern-slide competitions were arranged. A vote of thanks to the Chairman for presiding concluded the proceedings.

Hove.—At the meeting held on 11th inst. Mr. Watts read a paper on exposure. He warmly advocated the careful calculation of every exposure, even by the most experienced. The various factors were easily ascertainable, and the necessary calculations could be made while adjusting the dark slide. The earlier tables in use were shown and the different factors and calculations explained, examples for different times and seasons being worked out. Mr. Watts had lately been using Hurter and Driffield's Actinograph with plates having the speed number marked, and he found the exposures invariably exact. The working of this instrument as well as Watkins' exposure meter, and various other tables and actinometers were lucidly explained. In the discussion which followed, one member said that he occasionally used Watkins' exposure meter, and found about half the exposure sufficient. Mr. Watts said his own experience of that instrument was similar. While most of those present had at some time or other in their career made use of tables or actinometers, they had for the most part now discarded them. Some were guided by records of previous exposures; some judged by the amount of illumination on the focussing screen; others, guided too by experience, were content to give whatever exposure was convenient under the circumstances (within certain limits, of course), and trust to after-treatment in development for the production of good negatives. Amongst these apparently haphazard workers were some of the best picture-makers. Mr. Watts claimed that much of this facility in estimating exposure was due to previous experience with tables, etc, and that much trouble would be saved and more certainty of results obtained by combining their use. All were agreed as to the value of exposure tables to beginners.

Hull.—The members met on the 13th inst. under the presidency of Mr. C. D. Holmes. In the course of the presidential address, the chairman alluded to the success that had seemed to attend the society, and attributed it largely to the efforts of those who had held the reins of office, paying tribute especially to the services rendered by the retiring president, Dr. E. H. Howlett. He and every member of the council was anxious to assist the beginners. In photography success could only be achieved by perseverance and the experience gained by failure. He was pleased to think that stercoscopic work was once more to the fore, and he commended a study of it to all present, especially to those who were interested in lantern work. Referring to microscopic work, he said that this fascinating study was especially adapted for winter work, inasmuch as it could be carried on indoors. In conclusion, he urged the members to freely ventilate their troubles, and not to be ashamed to confess their failures. The address, which was throughout listened to with much interest, created a favourable impression. A discussion followed, in which Messrs. John Pybus, J. H. Allcott, Boville, Coleman, and others took part.

Ireland.—The opening meeting of the session was held on 14th inst., when, despite the inclemency of the weather, a large number of members and visitors turned up. In the unavoidable absence of the President, Mr. Geo. Mansfield, J.P., the chair was taken by Mr, M. Hedley, who announced that in the summer excursion competitions the prizes had been awarded as follows:—Poulaphuca Excursion: 1st, Mr. R. M. Inglis; 2nd, Mr. V. E. Smith. Boyne Excursion: 1st, Mr. A. M. Geddis; 2nd, Mr. J. A. C. Ruthven. Professor J. A. Scott, Vice-President, was then called on for the lecture he had kindly consented at almost a moment's notice to deliver. Professor Scott then gave a very interesting and humorous account of how he spent his holidays in the east and west of Ireland, illustrated by a large number of excellent slides made from hand-camera shots. The pictures of the dwellings of the people and of the people themselves were highly characteristic of the poorer peasantry of the country; but Professor Scott stated that in Galway at least they were prepared for him, the veriest *gamin* appearing to know as much about

hand-cameras as himself, consequently it was a matter of considerable difficulty to catch them "napping." Professor Scott's lecture was listened to with very great interest, and at the conclusion slides were also exhibited by Miss Thwaites and Messrs. Geddis, Inglis, and Mathews.

Isle of Thanet.—On the 10th inst. the members assembled in full force to observe a demonstration on "Solio" paper, which was given by Mr. A. C. Baldwin, a representative of the Eastman Company. This gentleman, who was well up to his work, gave a very interesting and practical demonstration of the method of working the paper and toning it before his audience. A number of prints and bromide enlargements obtained by the electric light were exhibited, giving general satisfaction. The chair was taken by Mr. W. Saunders, Vice-President, and a very pleasant evening was spent.

Kensington and Bayswater.—A meeting was held on the 17th inst.; Mr. R. Fogbrook presided, and twenty-three other gentlemen were present. It was resolved that a lantern should be purchased as soon as the funds should permit. The following donations had already been offered, namely, £1 each from Messrs. Robinson, Hahn, and Brumwell. On ascertaining the total cost of lantern and accessories, Mr. Robinson kindly offered to increase his donation to the amount required, which is £9 16s., thus making his generous gift amount to £7 16s. It need hardly be stated that Mr. Robinson's kindness was greeted with loud applause. Mr. G. Bursnell was elected honorary lanternist, and Mr. Brumwell honorary librarian. Upwards of eighty slides were shown by Mr. Bursnell in the lantern kindly lent by Mr. Short. The members who exhibited were Messrs. Bursnell, Davidson, Frogbrook, Hahn, Hannaford, Hodd, Jones, Parrott, Seales, Sutherland, and Brumwell. Some of the slides exhibited were the member's first attempt, and the results show great care in manipulation. Notable among these were the slides of Messrs. Hannaford and Parrott, the former exhibiting some very fine "Ideal" snap-shots taken in Jersey, and the latter some excellent river scenes. Mr. Bursnell showed some excellent results on "printing-out" slides of his own manufacture. Mr. Frogbrook's illustrations of City life show hand-camera work to advantage. Captain Davidson's slides of British gunboats were much appreciated. The Messrs. Hodd showed some very picturesque sea and landscapes.

Leytonstone.—At a meeting on the 15th inst., Mr. J. Watson Brown, M.A., in the chair, Mr. D. G. Riddick, in the presence of a good muster, delivered his lecturette upon "Hand-Cameras." He exhibited and described the Shuttle, which was admired for its simple changing action; the Frena, the good points of which are its simple changing action and swing back; and Messrs. Watson's Vanneck, which is fitted with a finder almost as large as the plate and has many other improvements. He also showed Mr. Roberts' cheap hand-camera, which is provided with a swing back and may be used upon a stand. Mr. Symmons then showed his Eureka, and the President showed his Roberts' magazine camera. Mr. Cricks, a member of the club, brought up a new hand-camera of his own invention, which met with great approval, and has advantages in respect of changing movement and shutter over any in the market. The lecturer exhibited as well numerous results of his own in this class of work and some enlargements from hand-camera negatives. In the discussion that followed the President said he preferred plates to films; he also was in favour of blind shutters. He then pointed out several advantages of a hand-camera, its portability, always ready for use, being able to work without getting a crowd round, and not likely to have remarks passed and attract attention. He thought that no photographer's outfit was complete without one. Mr. Wates advocated complete simplicity of action, and was glad to see the introduction of a swing back, as in the Frena and Roberts, as he thought that the want of one in some of the hand-cameras of the day was their great fault. Mr. T. Symmons followed, and considered that for snap-shots and for travelling, hand-cameras were all that could be desired, and strongly advocated their being as small as possible consistent with efficiency. He also preferred a fixed focus lens, and pointed out the many advantages; but still thought that when you come to time exposures there was nothing like our old friend on the tripod, with which we can take our time with focussing, and have our swing-back, side-swing, rising front, level, etc. Several members and the President gave their experience of the use of hand-cameras, the latter saying that notwithstanding the many excellent cameras he had seen that evening he still thought that Roberts's was the best, not because it was the cheapest, or because Mr. Roberts was a member of the club, but conscientiously, and because he had had so few failures with it.

North Middlesex.—On 10th inst. the President (Mr. J. W. Marchant) was in the chair, and between sixty and seventy members were present. Col. J. Gale addressed the Society, and illustrated his remarks with a selection of his beautiful lantern-slides. The views were drawn from all parts of the country, and illustrated many different phases of rustic life and employment, and varied atmospheric effects—sunrise, sunset, mist, snow, hoar-frost, rain, and sunshine. Among the slides were included by special request a number which Col. Gale had shown on a previous occasion, noticeably "Abandoned," "Through the Driftway to the Fold," and a number of atmospheric effects on the Sussex downs. He then exhibited a fine selection of slides by his friends Mr. Bright and Mr. B. Gay Wilkinson. Mr. Wilkinson's slides were chiefly beautiful studies of rustic scenery, and Mr. Bright's were partly marine studies, and partly humorous studies of children and animals. One of a child sitting on the sands and glowering at the camerist caused repeated peals of laughter. A most enjoyable evening was spent, and a vote of thanks was moved in suitable terms by Mr. F. Cherry, and seconded by Mr. H. Walker, who related how, when recently on a photographic tour in the lake district, he came across a cottager who showed him with evident pride a photograph of her cottage which had been presented to her by Col. Gale. The next meeting will be held on the 24th inst., when an exhibition of members' slides will be given. Ladies are invited, and visitors will be welcome.

Richmond.—At the annual general meeting held on the 7th inst. the following officers for the ensuing year were elected:—President, F. P. Cembrano, jun.; Committee, J. H. Alabaster, A. Ardaseer, C. H. Davis, A. Hunter, F. Neville, G. W. Ramsay; Hon. Sec., P. Ennis. The President announced that the annual dinner would be on the 28th November at the Greyhound Hotel, and that the conversazione would be held at the Theatre Royal on the 9th January, 1893. The annual report and balance sheet were accepted. Beginning from October 10th, the meetings will be held on Mondays instead of Fridays. The first meeting of the winter session took place on the 10th inst., it being also the first meeting under the new conditions, that is to say, held on Monday evening instead of Friday, and in the larger room to secure the use of which has been the object of the change of day. The advantages of the new room were manifest, the ventilation, lighting, and general comfort leaving nothing to be desired. Mr. Ennis read the paper by Mr. Dawson on "Photogravure," lent by the P.S.G.B., and the subject was illustrated by a large number of choice prints lent by Mr. Ramsay, in addition to those supplied with the lecture. The paper was interesting, but the absence of the black-board illustrations to which frequent reference was made, rendered some portions of it less intelligible than might otherwise have been the case.

SOCIETIES' FIXTURES.

Oct. 20.—LONDON AND PROVINCIAL.—Lantern Night: Competition Slides.
„ 20.—PRESTON.—Lantern Evening: "Some English Cathedrals," by Mr. E. J. Andrew.
„ 20.—LOUTH.—Opening Meeting. Lecture, Mr. C. W. Hastings.
„ 21.—CROYDON (Microscopical).—Lantern Evening: Members' Slides.
„ 21.—BURTON-ON-TRENT.—Show of Photographic Work.
„ 21.—LEWISHAM.—"Robinson's Picture Making," by Mr. C. W. Hastings.
„ 22.—LEYTONSTONE.—"Stereoscopic Photography with a Single Camera," by Mr. A. P. Wire.
„ 22.—HULL.—Loan Slide Exhibition.
„ 24.—NORTH MIDDLESEX.—Members' Lantern Evening.
„ 24.—RICHMOND.—"Transparency Making without a Dark-room," Mr. F. P. Cembrano, jun.
„ 24.—THE LANTERN SOCIETY.—A new Form of Lantern in Aluminium, shown and worked.
„ 24.—CORNISH CAMERA CLUB.—Annual Supper and Election of Officers.
„ 24.—EAST LONDON.—Exhibition and Competition.
„ 25.—EAST LONDON.—Exhibition and Competition.
„ 25.—CLEVELAND.—"Halation and Reversal of Image."
„ 25.—BIRMINGHAM.—"Lantern Slide Making," Mr. E. H. Jaques.
„ 25.—HACKNEY.—"Flashlight Photography," Mr. R. Beckett.
„ 25.—LIVERPOOL (Fairfield).—Practical Demonstration on Bromide Paper, Mr. J. H. Welch.
„ 26.—LIVERPOOL (Y.M.C.A.)—"Some Notable Books I have Read," Mr. T. Crosbie.
„ 26.—LIVERPOOL (Camera Club).—"Ilford P.O.P., and the Methods in use to obtain the Best Results," Mr. W. A. Brown.
„ 26.—THE PHOTO CLUB.—Smoking Concert.
„ 27.—HULL.—Developing Contest.
„ 27.—LONDON AND PROVINCIAL.—Members' Open Night.
„ 27.—PHOTO. SOC. OF IRELAND.—"Picture-frame Making," Mr. J. Carson.
„ 28.—CROYDON.—Discussion on the Chemistry of Photography.
„ 29.—LEYTONSTONE.—Members' Lantern Night.

Magnesium as a Source of Light.—In the *American Journal of Science*, April, 1892, Mr. Frederick J. Rogers sums up the results of his investigations as follows:—(1) The spectrum of burning magnesium, as has already been pointed out by Pickering, approaches much more nearly that of sunlight than does the spectrum of any other artificial illuminant. (2) The temperature of the magnesium flame, about 1,340 deg. C., lies between that of the Bunsen burner and that of the air-blast lamp, although the character of its spectrum is such as would correspond to a temperature of nearly 5,000 deg. C., were its light due to ordinary incandescence. (3) The "radiant efficiency" (the ratio of *luminous energy* to total *radiant energy*) is 13½ per cent., a value higher than that for any other artificial illuminant (excepting, perhaps, the light of the electric discharge in vacuo, for which Dr. Staub, of Zurich, has found an efficiency of about 34 per cent.) (4) The radiant energy emitted by burning magnesium is about 4,630 calories per gram. of the metal burned, or 75 per cent. of the total heat of combustion; as compared with 15 per cent. to 20 per cent. in the case of illuminating gas. (5) The thermal equivalent of one candle-power-minute of magnesium light is about 2·5 lesser calories, as against 3·5 to 4·0 for other artificial illuminants. (6) The total efficiency of the magnesium light is about 10 per cent. as compared with a quarter of one per cent. for illuminating gas. (7) Taking into consideration the greater average luminosity of the rays of the visible spectrum of the magnesium flame, it is certain that *per unit of energy expended, the light-giving power of burning magnesium is from fifty to sixty times greater than that of gas.*

Before the Camera.—"Well," said the photographer, "it's funny how people will take attitudes when they find the camera pointed at them. You tell them to look pleasant, and at once their faces take on an expression of ghastly smirk, or if the sitter be a young lady she almost always wants to be taken side face, looking down with a conscious simper. People with turn-up or very long noses invariably wish to be taken in profile, while the cross-eyed man with a huge mouth is always taken front face. It's no use. I've been in the business for years, and now I don't argue with them. I let them have their say, and then I try to have mine. Now, see this tall man coming in. He'll cross his legs and put one foot in the sphere of the lens so that it will take the size of two, and this old lady with two or three ehins will be taken with front face and look like Humpty Dumpty." They both did.—*Answers.*

Gilmer Brothers, agents for Messrs. Clement and Gilmer, of Paris, have removed to larger and more commodious premises, which are situate at Manchester Buildings, Cannon Street, Birmingham.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume.*

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5843. **Riviera.**—Can any of your readers inform me if there are any dark-rooms to be found in the Riviera, say at Cannes, San Raphael, Hyeres, etc.; also if there are any difficulties that a lady with a hand-camera would be likely to meet with (provided she kept clear of fortifications)? Would the Customs officials be likely to want to open a "Frena" camera full of exposed films, if carried in the hand? Any information in regard to photographic possibilities in the Sunny South would be acceptable. Length of exposure, I take it, would be at least half what is necessary here.—EXCELSIOR.

5844. **Toning.**—I have the following formula by me recommended, I believe, for albumenised paper, giving rich velvety tones, similar to an engraving. Uranium and Gold Toning Bath:—

Sodium acetate	60 gr.
Sodium bicarbonate	10 ,,
Sodium chloride	30 ,,
Uranium nitrate	5 ,,
Gold	4 ,,
Water	20 oz.

Would some kind reader inform me whether this precise formula will do for gelatino-chloride paper? If not, information will be gladly received.—IO DI.

5845. **Starch Mountant.**—Can any reader tell me what I should put in starch paste to make it keep and prevent it from turning watery?—STAG.

5846. **Portraits on Plain Paper.**—Will any of your kind readers inform me how the photograph which takes a medal is reproduced and put in the AMATEUR PHOTOGRAPHER or in any book, as I want to put some in a book, and should very much like to know the process, as it seems to me to be a cheap way? Any information will greatly oblige.—T. T.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Sept. 30th.—No. 5822.
Oct. 7th.—Nos. 5827, 5828, 5831, 5832.
,, 14th.—Nos. 5834, 5835, 5836, 5837, 5838, 5839, 5841, 5842.

ANSWERS.

5833. **Photo-Zincography.**—Best work is "Photo-Mechanical Printing," by W. T. Wilkinson. It would take too much space to describe it, except in outline. The image is impressed upon a zinc plate by means of a greasy ink, and an etching fluid being applied eats away the groundwork, leaving the image in relief, so that it can be printed from like ordinary type.—INQUISITIVE.

5840. **Toning.**—"Anon" is much over-toning the prints. There should not be more than four or five in the bath at a time, as this class of paper tones with great rapidity. The prints are ready when the darker parts viewed by *transmitted* light are still a warm brown colour, and, though the surface will appear almost grey, it will return after fixing to a pleasing brown tone.—W. PITCAIRN CRAIG.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

W. A. GAUNTLETT (Assam).—We are afraid nothing can be done for your chloride papsr. Such a mishap is, we believe, quite unique. You might try washing the prints thoroughly in water and then placing in a chrome alum bath, washing and drying. And then toning. We should also recommend the use of a combined toning bath with at least double the amount of alum in it. The stops for the Suter lens should be *f*/6·75, *f*/9, *f*/16, *f*/22·5, *f*/32, and *f*/40. Possibly *f*/22·5 and *f*/32 may not be there, but it is very easy to determine by finding the equivalent focus, and dividing it by the diameter of diaphragm aperture.

FROST.—The questions are rather difficult to answer, because of the varying light, but with *f*/32 stop and sunlight about 1 sec. for a snow scene. For a frost scene, by which we suppose you mean, hoar frost at close quarters, about 2 secs. In developing such pictures use pyro and ammonia, and avoid too great contrast.

UMBRIA.—The front of the Crouch-Dresser hand-camera is removable, so that the lens can be easily got at. It is not possible to use a lens of shorter focus than the one supplied, nor is it advisable. In our hands the camera has proved very efficient.

J. N. WILLIAMS.—Many thanks for your letter, the contents of which we have noted.

NEWTOWN.—The cause of your stains is undoubtedly using the washing water of first batch for the second, and allowing the prints to lie one on top of the other.

CARLTON.—(1) Over-printed; negative would probably stand intensification with improved result. (2) Ditto. (3) Wants clouds to balance it, and slightly over-printed. (4) Flat and overtoned, camera was not straight. (5) Flat and over-toned, see note to 1. You try to get too much on your plate, all your prints are wanting in objects of interests, they are too panoramic; little bits will give you better results.

E. GARBUTT.—The instructions you want are too long to include here. Write to Mawson and Swan for their little pamphlet, price 3d.; or Snowden Ward's "Practical Ferrotyper," price 6d., will tell you all you want to know.

H. F. LINGING.—It may have been the fixing bath being used in a dirty dish. The sulphocyanide toning bath is acid, unless neutralised, and to place the print direct from this into hypo is not advisable unless the hypo is distinctly alkaline. A very common cause for yellow whites is not changing the first washing water quickly. We prefer placing the prints into carbonate of soda or salt and water, so as to convert the free nitrate of silver into an insoluble salt. The addition of salt to the toning bath is also advantageous, because the toning is more regular. The cause of your dirty yellow images is due to insufficient toning.

C. B. O.—You will find, we think, the following giv you better results for your snap-shot work.

1.

Pyro	480 gr.
Sodium sulphite	4 oz.
Citric acid	30 gr.
Water to	10 oz.

2.

Anhydrous carbonate of soda	480 gr.
Sodium sulphite	160 ,,
Water to	10 oz.

For use take of

Solution 1	20 min.
Solution 2	240 ,,
Water to	1 oz.

Do not add all the soda at once, and bromide is unnecessary as a rule. The new Cadett lightning plate is certainly the most rapid plate we have used yet. We shall be pleasd to criticise negatives for you.

HARVEY SWIFT.—(1) Sitter's mouth too open, and dress too white, shadow under left eycbrow too dark. (2) Spoilt by the mouth and teeth. (3) Good. Nos. 2 and 3 are rather too low down on print. To avoid showing spotting, mix your colours with weak gum water, or else use a little albumen with them. No. 3 print quite up to standard.

FRY, WA, BA.—(1) If you unscrew the back combination, and screw the front one in its place, you can use the lens for landscape work. (2) Tylar's pulp slabs or enamelled iron for gloss, matt celluloid for matt surfaces. (3) We believe the instrument you name is patented, and therefore it is illegal to make it—a short-focus reading-glass lens, to be had from any working opticians. Try Mr. Brooker, of Robertson Street. Send up article, and let us see it before we commit ourselves.

G. E. T.—The full text of the paper you want will be found in our issue of Nov. 23, 1888, but an extract is given in our issue of July 29th, 1892, p. 63.

PLATINA.—If you can turn out such prints as the one you send, after having had a camera a fortnight, we prophesy that it won't be long before you take a medal. Lyonel Clark's toning process is applicable to chloride papers, but a better one even is

Chloroplatinite of potash	1 gr.
Citric acid	30 ,,
Water	1 oz.

or

Chloroplatinite of potash	1 gr.
Sodium bitartrate	30 gr.
Water	4 oz.

You can get rid of or avoid the glassy spots by using matt celluloid to squeegee on to instead of glass. The cause of your paper sticking is that you do not wax or talc the glass sufficiently. Don't vignette your prints, and try Mezzotype paper, which is a rough surface paper. Write again, or call and see us with some more work.

T. WATSON CRAIK.—Many thanks for prints. We hope to reproduce one.

H. TONKIN.—Pleased to lend you prints. Write again, please, about ten days before you want them.

ERA.—The pinkiness of which you complain is generally due to want of gold in the bath. Try platinum toning chloride paper; it gives lovely results. We hardly see why you wanted the third figure, it would have been well balanced without. Try a rough paper like Mezzotype.

TUM TUM.—You have omitted one very important datum, viz, the name of the developer you use. Write

and let us know. At present the only suggestion we can make is that the water contains a lot of chlorides.

CROCODILE.—(1) The films you name are very satisfactory, but you might get a better developer, we think, though that is, of course, a matter of opinion only. (2) Greeff's fixing salts are very satisfactory, and quite as effectual as hypo. (3) Yes, they require the same amount of washing. (4) The chemicals should be in a good condition if they have never been opened. (5) Why not try the Tabloids? They are good, and very convenient to carry.

SOLIO.—The print you send is a good specimen of platinum toning, and if of matt-surface would resemble Karl Greger's prints which took a medal at Pall Mall.

KI-NON.—The price of the camera is £5 5s., but we have asked the makers to send you list, etc. The negatives are beautifully sharp and enlarge perfectly, and are specially useful for lantern and enlarging work. The makers are going to make a quarter-plate size. Mr. Turnbull's address is 6, Rose Street, Edinburgh. Sutton's article was in the AMATEUR PHOTOGRAPHER last year, we believe, but will look it up.

J. R. BIGNEY.—One of the probable causes of the peculiar fading may be that you do not wash the prints sufficiently. Over-exposure may also be the cause. Do not use too much bromide, and develop longer. None of the prints you send are developed enough.

J. S. FORSYTH.—Fault lies in the paper. Write to the makers. Is it not old paper you have?

E. S. THOMAS.—Letter by post.

W. F. BECK.—You will find in this column above, in answer to C. B. O., a very good snap-shot developer. The best developer for lantern plates depends upon the tone you require. Let us know this, and we can help you.

B. PUCKLE.—The cause of your fuzzy outlines is non-registration of the bromide paper with the focussing surface. Let us know how you work.

H. PRESS.—You could easily have a slit cut in the tube and diaphragms. The large aperture is useful for children and such sitters. The lens is, we should say, an old one, but is probably worth about £4. For the Optimus competition send one entry form for every print.

Sale and Exchange.

RULES.

CHARGE.—Twelve *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* **2½** *per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* 1*s.*

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of* 3*d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.,** *or a commission of* **2½ per cent.,** *upon the sale price of the apparatus.*

Cameras, etc.—Lancaster's quarter-plate camera (Instantograph), complete, four double slides and leather bag, guaranteed in good condition, reason for selling no time for working, price 40s.—A. E. Barrett, c/o R. T. Smith and Co., Hereford.

Cameras, Lenses, etc.—Half-plate camera, with whole-plate portrait lens, £3 15s., lens worth all the money.—F. Garner, Glen Cottage, Blacker Road, Huddersfield.

Enlarging Apparatus.—Hume's Cantilever enlarging apparatus, 8¼ in. condensers, cost with lens £11 15s., perfect condition, no further use, cash £9 10s.—Defaye, David Place, Jersey.

Hand-Cameras, etc.—Marvel hand-camera, two double backs, finder, good lens, folding ruby lamp, unbreakable, and Ilford manual, 12s. cash.—C., 1, New Henry Road, Gloucester.

Lenses, etc.—Rapid rectilinears! French make, special value, 5 by 4, 5½ in. focus, 11s. 6d.; 7 by 5, 7½ in. focus, 14s.; 9 by 7, 11 in. focus, 20s., complete with hood, flange, cap, and set of Watsrhouse stops, largest aperture *f*/8; three days' trial allowed.—Dorey, Lester and Co., Kilburn, London.

Splendid half-plate rapid rectilinear lens, iris diaphragms, 18s.—A., 8, Kenilworth Road, Willesden Lane, London.

Ross's compound lens for stereo portraits, groups, and views, 3½ in. focus, with rack, and pinion, and diaphragms, good condition, cost £5; also Lancaster's quarter Meritoire view lens, together or separate, for reasonable offer.—No. 348, office of this paper, 1, Creed Lane, E.C.

Sets.—7½ by 5 Watson's Premier camera, with turntable, four double backs, tripod stand, two bags, Ross' 8 in. P.S. lens, Thornton-Pickard shutter, etc., camera and lens mounted in aluminium, £24; new this spring.—Francke, St. Saviour's Road, Jersey.

Quarter-plate photographic set for sale; exchange for aquarium or anything useful.—Dry, 6, Garfield Terrace, Paignton, S. Devon.

Half-plate camera, three double backs, brass bound, Optimus rectilinear, and Lancaster's wide-angle lenses, Newman's shutter, in solid leather case, Meyall's tripod in canvas case, good condition, cost over £13, price £8.—C. Oldfield, Sadgehill, Shaftesbury.

Half-plate camera by Morley, three double dark slides, tripod and case, Hockin lens, splendid condition, £5 10s.—No. 336, office of this paper, 1, Creed Lane, E.C.

Lancaster's quarter-plate special brass bound camera, four slides, Optimus landscape lens, stand, bag, etc., new, never used.—5, Milton Grove, Stockport.

Sundries.—Photography, 12 volumes of AMATEUR PHOTOGRAPHER, viz., 1, 2, and 7 up to date, with 5 volumes of "Photographic Journal," and quantity of catalogues, etc., 15s.; clean.—Address, A. Tice, Stationer, South Street, Manningtree, Essex.

Gent.'s silver watch, thorough order, 17s. 6d., or will exchange for Griffiths' enlarging camera from quarter to whole plate, must be in good condition, or other useful article.—Cooper Lodge, New Road, Bocking, Essex.

What offers? "Popular Educator," "Teachers' Aid," vols. 1 to 13, "Pick-me-up," No. 1 to date, "Chambers's Journal," 1886, 1887, 1889, 1890, "Argosy," 1888, "Phonographic Punch," vols. 1 to 3, "Shorthand Star," vols. 1, 2, "Cassell's Magazine," 1891.—George Tipper, Grimston, Lynn.

WANTED.

Cameras, etc.—Wanted, whole-plate camera, complete, Shew's preferred; exchange grand St. Bernard puppy.—F., care of Mr. Mathews, 156, Loveridge Road, Kilburn, N.W.

Wanted, half-plate camera, slides, and tripod.—Sowerby, 12, Station Road, Harlesden.

Good long focus camera wanted, half-plate or larger, in exchange for half-plate single extension camera, with three book backs, removable stereo division, pair single stereo lenses and shutter.—E. Smith, 28, Burford Road, Nottingham.

Cameras, Lenses, etc.—Half-plate modern camera, three double slides, Dallmeyer's or Ross's View lens, tripod stand.—Jones, Chemist, Penmaenmawr.

Half-plate camera, Lancaster or similar make, and lens.—No. 347, office of this paper, 1, Cresd Lane, E.C.

Changing Box, etc.—Changing box and slide for Hare's half-plate camera, must be in good condition and cheap (replies to another paper lost through misdirection).—No. 340, office of this paper, 1, Creed Lane, E.C.

Prints.—Wanted, rough prints of snap-shots of "figures in action," children preferred, for scrap book. State terms.—Stainforth, Temple Chambers, Falcon Court, Fleet Street.

Shutter.—Thornton-Pickard snap-shot, safety blind shutter for 1⅝ in. lens tube.—Garwood, 9, Arlington Street, Glasgow.

Bargains in Cameras and Sets.—Optimus half-plate Rayment camera, reversing back, and all best movements, fitted rapid rectilinear lens, iris stops, three double slides, and three-fold stand, grand set, as new, £7 5s.; half-plate Le Meritoire camera, Lancaster's lens, rack focussing, three metal double slides, focussing screen and stand, 45s.; half plate Underwood's Instanto wide-angle movement, double extension, fitted rapid rectilinear lens, slide, and folding stand, £3 17s. 6d.; half-plate camera, by Houghton, all latest movements, grand article, fitted three double slides, rapid rectilinear lens, and double folding stand, £6 10s.; quarter-plate Lancaster's Merveilleux set complete, 15s.; Meagher's quarter-plate camera, wide-angle movement, reversing back, fitted Ross landscape lens, five double slides, solid leather case and folding stand, 75s.; Lancaster's quarter-plate Instantograph, finest order, all latest improvements, including camera, lens, iris stops, two double slides, stand and case, 37s. 6d.; half-plate camera, reversing back, and rapid rectilinear lens, works *f*/8, both by Dollond, Ludgate Hill, double slide and folding stand, as new, take £4 4s.; 12 by 10 camera, finest mahogany, double extension, leather bellows, wide-angle movement, rising and falling front, etc., double dark slide, as new, £5 5s.; 5 by 4 best quality camera, by Robinson, Regent Street, leather bellows, rising, falling, and cross front, wide-angle movement, three double slides, fine rapid rectilinear lens, by Robinson; Newman's shutter and Eastman's ¼-plate roll holder, quite new, £5 17s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Lenses.—Voightlander whole-plate, grand definition, best condition, 30s.; 5 by 4 Optimus rapid Euryscops, Waterhouse stops moveable hood, 5½ in. focus, 47s. 6d.; quite new whole-plate rapid rectilinear by Charterhouse Stores, Waterhouse stops, best condition, 35s.; Lancaster's half-plate Instantograph lens, iris stops, grand definition, time and instantaneous shutter, 16s.; pair stereoscopic wide-angle rectilinear, by Charterhouse Stores, rotating stops, 4 in. focus, 45s. pair; Swift 5 by 4 wide-angle rectilinear, 5 in focus, rotating stops, 32s. 6d.; Back's 8 by 5 Autograph rapid rectilinear lens, iris stops, 9 in. focus, £3 12s. 6d., as new; Lancaster whole-plate wide-angle lens, rotating stops, best order, take 15s.; Dallmeyer portrait lens, c.d.v., grand definition, Waterhouse stops, finest order, 63s.; Ross' No. 2, c. d. v., portrait lens, Waterhouse stops, rack and pinion, take £4 5s.; 7 by 5 Optimus rapid rectilinear, Waterhouse stops, as new, 42s.; whole-plate Wray's landscape, Casket lenses, 5 in., 7½ in., and 10 in. focus, iris stops, quite new, take 70s., lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Bargains in Hand Cameras.—Talmer No. 3, fitted with Euryscope lens, iris stops, two large finders, time and instantaneous shutter, lever focussing, as new, £5 5s.; Optimus Ubique hand-camera, fitted Optimus R.R. lens, instantaneous shutter, three double slides, finder, adjustable focussing, £2 17s. 6d.; Kodak No. 1, best R.R. lens, carries 100 films, best order, in leather case, 40s.; McKellen's hand-camera, R.R. lens, shutter, carries 12 quarter-plates, covered leather, as new, 35s.; No. 1 Talmer, best lens, two large finders, time and instantaneous shutter, carries 12 quarter-plates, changing bag, as new, 62s. 6d.; No. 3 Kodak, very finest order, new spool films, rapid rectilinear lens, etc., solid leather case, £5 7s. 6d.; Beck's Frena hand-camera, new packet films, latest pattern, £4 4s.; hand-camera by Collins, quarter-plate, covered in morocco, fitted 5 by 4 Wray lens, iris stops, Thornton-Pickard time and instantaneous shutter, finder, direct focusser, patent changing box for 12 plates, Eastman's roll holder, and 6 double slides, quite new, £8 17s. 6d., cost double; Samuel's hand-camera, 9 by 12 centimetre, rectilinear lens, time and instantaneous shutter in case, quite new, take 32s. 6d.; Luzo's hand-camera, Robinson, Regent Street, quarter-plate R.R. lens, instantaneous shutter, carries 100 films, solid leather case, quite new, £4 17s. 6d.; Kodak, No. 4, size 5 by 4, new spool of films, warranted finest condition, in leather case, take £7 17s. 6d., cost £11 7s. 6d; Adams' Ideal hand-camera, twelve quarter-plates, finest rapid rectilinear lens, time and instantaneous shutter, as new, £5 15s.; Fallowfield's Facile, fitted rapid rectilinear lens, carries twelve quarter-plates, as new, £3 17s. 6d. Optimus magazine hand-camera, covered leather, carries 12 quarter-plates, finest Optimus rapid rectilinear lens, two finders, shutter, etc., as new, take £5 5s. All above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second hand apparatus bought, sold, or taken in exchange. Inspection invited.

Lanterns! Lanterns!! Lanterns!!! Slides! Slides!! Slides!!! The largest and most varied selection in the whole kingdom. Before selecting elsewhere, call and inspect the stock of the City Sale and Exchange, 54, Lime Street, Leadenhall Street, City, where we have no hesitation in saying you will find all that you require in this way. Lanterns for sale, lanterns lent on hire, lanterns sold on commission, or taken in exchange for other apparatus. Write for special supplemental lists, Manager, City Sale and Exchange, as above.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

ENLARGING APPARATUS.—Hume's enlarging apparatus, 5 in. condenser, without objective, 61s. 6d.; with 8 in. condenser, 122s. 6d., carriage paid.—Hume, 1, West College Street, Edinburgh.

IMPORTANT TO AMATEURS.—Negatives skilfully Retouched. Printed in silver, gelatino-chloride, etc., and Enlarged. Also Developing, Copying, etc.—Terms strictly moderate.—Address, Wilfred Emery, 24, South Street, Baker Street, W.

The Amateur Photographer

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 421. Vol. XVI.] FRIDAY, OCTOBER 28, 1892. [Price Twopence.

Our Views.

"To hold as 'twere the mirror up t nature."—*Shakespeare.*

Our Views.—"Photographs of the Year"—Date of Publication—The Societies Free List—Our Lantern Screen—The Horn Dance A New Application of the Camera—International Exhibition of Journals—A New Comet—Photomnibus Competition—*Truth* and the Free Portrait Dodge—Photographing Criminals—Winter Exhibitions.

Chit-Chat, by Chatterbox.

Letters to the Editor.—Photo Portfolio Club (F. G. Reader)—Exhibition Goods (Tylar)—The P.S.G.B. Medals (A Member)—Universal Hand-Camera (Garwood)—A New Society (Foulkes-Winks)—Mason's Toning Bath (Linging)—Chloride P.O.P. (Wilkinson)—Expansion of Ammonia on Dilution (Haddon)—Exeter Exhibition (Sparshatt)—Amidol for Lantern Slides (Wain)—The Amateur Photographer Lantern Slide Competition (Whitman).

Reviews—A Photographic Tragedy (Harvey)—A Catechism for the People, Pastor and Preacher (Brothers)—Platinotype (Chapman)—The Ilford Year Book (Britannia Works Co.)

Apparatus—Celloidin Paper (Zimmermann)—Cadett Lightning Plate—Panoramic Album (Lund).—The Cadett Lantern Plate—The Mawson Lantern Plate.

Articles.—General and Photographic Chemistry (Conrad)—The Oil Lantern and Its Manipulation (Hodges)—Gelatine Plates for Lantern Slide Work (Harris)—Substitutes for the Lime.

Exhibition.—East London.

Societies' Notes.

Societies' Meetings.—Barrow—Blackheath—Boarnemouth—Brechin—Brixton and Clapham—Crewe—Croydon—Glasgow—Greenwich—Hackney—Holborn—Leytonstone—Lewisham—Liverpool—London and Provincial—Louth—Munster—North London—North Surrey—Preston—Putney—South London—Sunderland—Wakefield—North London—West Surrey—Wigan.

Our Lantern Screen.—Our Dissolving Views.

Flashes, by Oxygen.

Editorial Department.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

Terms of Subscription—

United Kingdom	Six Months, 5s. 6d.	Twelve Months,	10s. 10d.
Postal Union	" " 6s. 6d.	" "	13s. 0d.
Out of Postal Union	" " 7s. 9d.	" "	15s. 3d.

Trade Advertisements *are received up to Tuesday morning.*

Publishing Department.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addreased to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 42.—"Sea Pieces and River Scenery." Latest day, November 21st.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, December 9th.)

It having come to our knowledge that it has been stated that our forthcoming issue of "Photographs of the Year" will be reproductions in collotype, we think it only right to publicly state that this is a deliberate mis-statement made by an interested party for his own ends. The pictures selected have been reproduced in Glyptogravure, which is a modified Woodbury process, and which has yielded results quite equal to, if not superior to those of last year.

We have no hesitation in saying that in artistic merit the pictures of this year are superior to those of last issue. A copy of the portfolio, "Photographs of the Year," 1892, has been placed by permission on the table of the Assistant-Secretary, at Pall Mall, and visitors can easily see for themselves, not only the quality of the reproductions, but the artistic merit of the pictures. Although the specimen copies are not identical in colour with those which will be issued, we have no fear that the final results will be inferior. Our publishers request us to again draw the attention of our readers to the fact that the price before publication will be 7s. 6d., and afterwards 10s. 6d. The actual date of publication will be Friday, November 4th, but a few subscribers may receive their copies before that.

If the Hon. Secretary of any photographic society, who does not now receive weekly a free copy of our paper for the use of the members, will inform us of the fact, we shall have much pleasure in placing the society on the free list.

Yet again we think we score one. We issue this week, beyond our regular quantum, an eight-page Supplement devoted to the Lantern. This will not, for the present at any rate, interfere with the ordinary Illustrated Supplement which appears on the second Friday of each month. "Our Lantern Screen," as we have called it, will appear on the fourth Friday of each month during the lantern season, and in connection with it we have instituted Monthly Lantern Slide Competitions.

One of our competitors, Mr. F. Udale, of Uttoxeter, in the last Monthly Competition sent us a print of a very curious old custom, of sufficient interest to warrant our reproducing it with the account of the custom. He says—

"During a ramble with the camera I found myself in Abbots Burnley, a village of about 2,000 inhabitants

situated on the borders of Needwood Forest, about twelve miles from Burton-on-Trent. The natives were celebrating their annual wakes, and amongst the attractions to be seen was a dance called 'The Horn Dance,' the subject of the picture. About eight deers' horns mounted are carried by men in grotesque attire, and to a lively tune they dance, charging each other, and then running away. The one on left is mounted on a hobby-horse; he now and again wips them up, and the archer in front shoots them. The whole thing is grotesque in the extreme. I was informed by the Vicar that the custom dates many centuries back, and 100 years ago the Horns were danced at the main entrance to the Parish Church on Sunday morning in the summer-time, a collection being made, and the proceeds used in the relief of the poor."

CAPTAIN FRASSEIS has just invented, or shall we say adapted, our own familiar friend the camera to artillery, so as to enable an easy and certain aim to be taken. The actual method is of course kept secret, but it seems that the image of the object to be hit passes through a lens and



"THE HORN DANCE."

is reproduced upon a screen, the centre of which is accurately marked out. When the image of the object falls on the central point the gun is fired.

THE accuracy of aim is said to be astounding, and also a mere novice may enter the darkened room containing the screen, and without any practice secure each time a hit. As the invention is to be fitted to field and siege guns, and the infantry are threatened with the same thing, the art of killing will become so highly perfected that there will be no one left to kill.

AN international exhibition of the ancient and modern press, organised by the Belgian Union of the periodical press and the Belgian circle of collectors of journals, will be opened in April and May, 1893, at the Museum of Fine Arts, Brussels. The "Helios Belge," charged with the photographic section of this enterprise, hopes to gather a complete collection of the special papers of the whole world. To cover the enormous cost of the enterprise, a tax of 7 fr. 50 cents. has been established.

PHOTOGRAPHY, as the handmaid of astronomy, has yet again enabled Professor Barnard, by the aid of the huge Lick telescope, to discover a new comet on 12th inst. With Mr. Barnard's discovery of Jupiter's fifth satellite and the new comet, he is fast taking rank as the first astronomical discoverer of the day. But it is not everybody who has such a magnificent instrument to work with as the Lick telescope.

MESSRS. WORMALD AND CO.'s second Photomnibus pinhole competition closes for entries on the 31st inst. Intending competitors may like to be reminded of the date. The prizes are a repeat of those given in June last—First, £2 2s.; second, £1 1s.; third, 10s. 6d.

Truth is again on the war path, and the old firm and the old trick, the "free portrait" swindle, is again to the front. It really is astonishing to find that there are still some dupes who can be gulled by this most transparent trick.

"THEY do things better in France" is almost as old a saying as the one of good Queen Ann. Still it happens to be true also of photographing criminals, if we may judge from the enclosed:—

"The *Bath Chronicle* gives an account of the attempt to photograph two men, now in Horfield gaol, charged with a watch robbery at Bath, and says the man giving the name of Ambrose, who ran off with the booty, made such a strenuous resistance that it is feared the likeness will not do much in leading to his identification. In the photograph obtained, the two hands of a stalwart police officer are round his neck, another hand has a tight grip of the prisoner's hair, while his arms are also held; but despite these forcible measures, Ambrose, by turning his face aside, thrusting his tongue in his cheek, and closing his eyes firmly, defied the skill of the artist and the strength of the police. Of Brett, his companion, the photograph is much better. We have often marvelled at the simplicity of the most cunning of our criminals, in allowing the gaol authorities to secure such excellent likenesses of their faces, that subsequent identification is readily made. Sometimes photographs are obtained in two or three positions, and showing the hands placed across the breast so as to display any peculiarities in them. In these days of snap-shots, it ought not to be a difficult matter, one would think, to secure photographs without the criminal having a chance to defeat the object of the authorities, as did Ambrose But goodness knows how much correspondence with the Home Office, and how much tape and sealing-wax, any attempt at such an innovation would mean."

DURING the winter months it is not unusual for societies to give some sort of public entertainment, and too often this is a lantern show. Now, to make a lantern show interesting and entertaining to the outside public, you must have an interesting subject, good slides, and a good lecturer. It is far better to sacrifice a little of the photographic and introduce a little musical element, as is, we note, being done by the Y.M.C.A. Photographic Club at Sunderland.

Chit-Chat.

JUDGING from the correspondence which has taken place upon the subject, the awards in the recent lantern-slide competition seem to have given rise to some controversy. There is, I think, much to be said on both sides of the question. Allowing past medallists to compete of course makes the competition a keener one, and raises the standard of excellence, *but* it certainly gives the producers of poor work less chance of obtaining distinction.

I CANNOT agree with Mr. McEwan in holding that because a particular picture happens to have been medalled, a lantern-slide of the same subject should not be eligible for entry in a subsequent lantern-slide competition. Is the technique demanded in the production of the slide to count for nought?

MR. J. W. WADE'S views accord entirely with my own; the more skilled the competitors, the better the work, and the keener the competition, and, in the event of an award, the greater the honour.

"MOI-MEME" apparently invites you, Sir, to a classification of your competitors which, if adopted, would certainly be novel. Are you to inquire of them the amount of time which circumstances permit them to devote to photography; and shall you demand to know, as a condition of competition, the amount of their income for the current year?

I TRUST, however, that my readers will not infer from the foregoing that I am in any way attempting to defend the "pot-hunter." For him, and for his methods, I have the most profound contempt.

IT is high time that the too common practice of sending medalled pictures to exhibition after exhibition should be stopped, and I infer from the awards at the Bedford Society's show that the judges were of the same opinion, for I see that in several instances certificates instead of medals were awarded to certain well-known exhibitors who had sent in work which had previously been medalled. By the way, I am tempted to inquire how it was that "Chaff" and "Winter" came to be entered in Classes 4 and 6, and not in the champion class which was provided? I am under the impression, though I may be wrong, that both pictures have received distinction elsewhere.

THE Camera Club Committee have good reason to be proud of their labours, for the collection of pictures, albeit there is a preponderance of "impressionist" work, is undoubtedly one of the finest ever brought together.

IT is, however, not quite so representative in character as its promoters would have us believe, for I know of several exhibitors whose productions, and position in photographic circles, should certainly have entitled them to the courtesy of an invitation, who are unrepresented, simply by reason of the invitation not having been extended to them.

I SHALL have more to say upon the pictures next week, but pending that, I would draw the attention of intending visitors to "Reed Harvesting" and "Lowland Solitude," the exhibits of Mr. Horsley Hinton. Both pictures rank among the best work in the room. Other notable exhibits are "Making Friends" and "The Long Day Wanes," by Mr. Ralph Robinson — these pictures alone are worth journeying to the Club to see.

THE past week has afforded the landscape photographer some of the finest opportunities for landscape work. The frosts and slight fogs of approaching winter have driven the ordinary pleasure-seeker and the mere ephemera of photographers from the scene, and now the earnest student may work without interruption. I have had one or two days with the camera recently on the shores of the tidal waters of the Thames, and have met with some splendid subjects for broad treatment. Seize the fleeting opportunity, ye medal hunters, and secure "ye misty mornings" while ye may.

CHATTERBOX.

Letters to the Editor.

PHOTO. PORTFOLIO CLUB.

SIR,—Would you kindly make it known in your next issue that there are vacancies for five members in the Photographic Portfolio Club. Ladies and gentlemen are eligible; intending members to submit specimens of their work. Full particulars will be sent on application.—Yours, etc., FRED. G. READER.

* * * *

EXHIBITION GOODS.

SIR,—The season has now approached when many exhibitions are taking place throughout the country, and manufacturers of specialities are requested to exhibit some of their latest goods. A great deal is usually promised by the person applying as to the care that will be exercised in showing the articles and returning same, but my experience is a sorry one, for if the goods have been fairly handled (I say nothing of soiling), the *repacking* is simply vile, possibly left to some persons who never packed a box in their lives. Polished goods sent in tissue paper, etc., will be returned bare, a burnisher tumbling about with mahogany cameras, and such like carelessness. Perhaps others have experienced the same kind of thing, and, like myself, almost vow not to exhibit again. If secretaries of societies and others desire to show the goods of manufacturers, and there is certainly an incentive on both sides to be up to date, the least that can be done in common justice to the exhibitor is to see personally that goods are properly and sensibly packed, so that no loss or quibble arises in a mutual arrangement.—Yours, etc.,

57, High Street, Aston, Birmingham. WM. TYLAR.

* * * *

THE P.S.G.B. MEDALS.

SIR,—The suggestion made in your last issue that the medals of the Photographic Society should be awarded without the competitors' names being known to the jurors is a good one, but it is, as you explain, impracticable.

It is a fact that both the hanging of the pictures and the awards have met with much adverse criticism year after year, not only from exhibitors themselves, in which case it might be set down to personal feeling, but by the photographic press. It is quite time that some effort should be made to remedy this state of things, for the holding of the annual exhibition is the chief function of the Society. Hints are frequently thrown out that partiality is shown in making these annual awards, and although there is probably no ground whatever for them, the fact which was admitted at a meeting of the Society last year that Mr. Robinson had been permitted to have his pictures hung where he pleased, lends some colour to the charge. It also leaked out at the same meeting that only one member of the hanging committee was present to direct the hanging of the pictures, although the absent members had "accepted the appointment," and the Hon. Secretary, whose presence would probably have prevented the unfortunate incidents which occurred while the hanging operations were in progress, was absent in the country. It is certainly desirable that the judges shall possess the full confidence of the exhibitors, and the present system of electing them is hardly conducive to such a result.

It is questionable whether an exhibitor should not be altogether disqualified from being a judge. He must inevitably have a leaning towards his own style of work, and is hardly in a position to judge impartially of the work of those by whom at previous exhibitions he may himself have been awarded a medal.

Would not the experiment be worth trying of obtaining the services of three artists as judges to act alone in that capacity, separate judges being selected to make the awards on apparatus and technical exhibits? Such an arrangement would put an end to charges of "favouritism" and "cliqueism" so frequently made at present. Moreover, there is some reason to think that the awards would be better, and would carry more weight than they do at present, and be more instructive to photographers.—I am, yours, etc., A MEMBER OF THE P.S.G.B.

* * * *

UNIVERSAL HAND-CAMERA.

SIR,—In that portion of article on "A Universal Hand-camera" by Major Bruno, in your issue for June 24, 1892, the view finder of the instrument is described. No dimensions are given for the box, and I find, on scaling the sketch, that its dimensions do not correspond with the aperture to be cut in

front door of case, given in the same chapter as 1⅛ in. by 1 in., and further, neither the diameter nor focus of the bi-concave lens recommended is given.

If Major Bruno will kindly give me the dimensions of the finder-box, and the diameter and focus of lens, I shall be much obliged. I am of course assuming that the lens is circular.—Yours, etc., A. J. GARWOOD.

* * * *

A NEW SOCIETY.

SIR,—A society is being formed for the purpose of giving free lantern entertainments at the various London hospitals and charities. The first meeting is fixed for Thursday the 27th October at the address below, in Room No. XI., for 8 o'clock sharp, and it is requested that all gentlemen wishing to help in this effort to brighten the lives of our less fortunate fellow creatures are asked to attend this meeting.

All who wish to join this society and cannot attend, are desired to communicate with the undersigned.—Yours faithfully,

B. FOULKES WINKS, F. SIMMONS (*Secs. pro t m.*)

Y.M.C.A., 182, Aldersgate Street, E.C.

* * *

MASON'S TONING BATH.

SIR,—I have been giving Mr. Mason's toning bath a good tria with two papers, the Ilford and Eastman gelatine printing-out papers. The result of my experience is that on the whole it is a very good bath for the Ilford paper, saves a lot of washing, which alone is a great advantage with this paper, more so than it would be with the albumen. The danger to be avoided is that the bath soon becomes excessively acid and yellow tones result on fixing; but the remedy is obvious. The tones, with satisfactory negative, are warm purple brown; it is quick, but the gold must not be stinted. With the Eastman paper I find it takes first a blue-black tono that rapidly turns to pink in the half tones, though the bath is rich in gold. This pink fades slightly on fixing, but the tone remains decidedly pink to warm brown in shadows. Bath keeps neutral, fixing solution a little alkaline. I think that the bath should be tried with the Ilford paper, as it is nearly as little trouble as the combined baths, the tone richer, and has not the pitfalls to the beginner that the combined bath leads him into. Should much like to have the results of others with the Eastman paper. I feel much obliged to Mr. Mason for introducing the bath, and remain, yours, etc., HY. LINGING.

* * * *

CHLORIDE P.O. PAPER.

SIR,—I have just read Mr. Underwood' very able and interesting paper on the above subject in your issue of 21st inst., but may I ask him (as an amateur) to define "a small scraping of chalk," "a small bit of washing soda." Surely these terms are ambiguous and embarrassing to a beginner? Perhaps he would also kindly say how long prints should be left in hypo 3 oz., to 20 of aqua? Or is there any means by which one can tell when fixation is complete? Are untoned prints on this paper durable?

With apologies for queries, and thanks in anticipation, faithfully yours, W. FALKINER WILKINSON.

* * * *

EXPANSION OF AMMONIA ON DILUTION.

SIR,—In reply to Mr. Cadett's letter on page 259 in your issue of the 14th inst., allow me to draw his attention to what is said in Watts' *Dictionary of Chemistry* on the authority of the late Dr. Ure: "One volume of water by absorbing 505 volumes of ammonia forms a solution occupying 1·5 volumes, and having a specific gravity 0·9. This when mixed with an equal bulk of water yields a liquid of specific gravity 0·9455, whence it appears that aqueous ammonia expands on dilution." Such a mixture ought, according to Griffin, to occupy a volume 2; but if we calculate from the above data, we find that it occupies 2·0084 volumes, giving an increase of volume corresponding to 0·42 per cent. The number I obtained from the rough experiment I made lately gave an increase of 0·37 per cent., showing that I was not very far from the truth.

If Mr. Griffin's tables were calculated on the assumption that there is no increase in volume when ammonia is diluted with water, they must be wrong.

The whole matter can be easily settled by obtaining the reply to the following question: Does ammonia on dilution expand, or is the volume of the diluted ammonia the sum of the volumes of the constituents? I have given my answer above, and I hope Mr. Cadett will repeat that simple experiment I referred to at the London and Provincial Photographic Association, with all the necessary precautions, and report the result. I am convinced that when he has done so his faith in the particular tables will not be as great as it is at present.

The most recent researches on the connexion between specific gravity and percentage of ammonia in different solutions do not agree with the tables given by Griffin.

I never made any allusion to the expansion affecting results practically. All that I wished to draw attention to was the statement that ammonia differed from all other liquids in neither expanding nor contracting on being diluted with water, and that calculations based on that assumption must be erroneous; but this departure from the straight line may not introduce serious errors in practice.—I am, yours, etc., A. HADDON.

R.N. College, Greenwich, S.E., October 22, 1892.

* * * *

EXETER EXHIBITION.

SIR,—Will you allow me through the medium of your columns, to inform the numerous applicants for entry forms for our Exhibition, that the latter part of Rule 2, prohibiting marks on the face of exhibits, is not intended to exclude the *titles* of pictures.—Yours truly, JOHN SPARSHATT (Hon. Sec.)

* * * *

AMIDOL FOR LANTERN-SLIDES.

SIR,—Since you published the Amidol formula with 20 gr. of 10 per cent. yellow prussiate of potash to the ounce of diluted developer, I have used it with great success for reductions in the camera, although the developer seems too energetic for contact exposures.

Two lengths of from 6 in. to 9 in. of magnesium ribbon burned behind ground-glass give a sufficient exposure for reducing a full plate to lantern size, using a *f*/6 stop and Thomas' lantern plate.

The modified Amidol developer appears to be quite as energetic as 1 in 20 Rodinal without restrainer. Lantern-slides may be made by this means from large negatives by reduction quite as easily as contact slides from smaller negatives, and the results are far superior.

If you think it would be at all of service, I will send you a sketch and description of the simple home-made apparatus, costing only two or three shillings, which I have used.—Yours truly, EDW. B. WAIN.

* * * *

THE "A. P." LANTERN-SLIDE COMPETITION.

SIR,—Referring to this much-vexed question, we should, with all due deference as to encroaching upon your space, like to add our opinions.

What we contend is, it seems hardly just and in accordance with "fair 'play," that the multitude, or rather the "obscure workers," in this interesting pastime should, by reason of the continued competition of others who have attained the top of the tree, be debarred year after year from gaining recognition of their work.

We cannot for one moment believe that the "average worker" is devoid of that pluck and determination to get to the front, or to contest the supremacy held by others, which is so inherent in the young worker. Such is not the case! And yet when we consider that his opportunities of improving the shining hour, and possibly his resources too, are so much less than his more fortunate colleague's, it is quite time some distinction was made between the medallists and the aspirants to such honours.

The gold medallists are surely numerous enough now to hold a competition between themselves, and we therefore suggest that a Championship Class, devoted to gold medallists exclusively, should be instituted, and another class for the silver medallists and minor awards.

We feel sure this would give universal satisfaction, and would prevent for all time these constant bickerings. Then when the competitor in the lesser competitions had risen to eminence, he would have an opportunity of tackling the gold medallist according as his impetuous or peaceable nature dictated.—We are, yours faithfully, A. WHITMAN,
G. S. WILLIAMS,
WM. WHITEN.

IMPERIAL LANTERN PLATES.

EXTREME DELICACY OF GRADATION.
PERFECT TRANSPARENCY OF SHADOWS.

READ THIS.

THE PHOTOGRAPHIC NEWS of 30th Sept. says:

"The Imperial Dry Plate Co. have brought out a Lantern Plate which **gives excellent results, translating with great beauty every gradation of tone** observable in the negative. The new plate differs from other lantern plates in being quick instead of slow. This is a great advantage when it is desired to make reduced pictures from larger negatives. **The plates admit of wonderful latitude in exposure.** We developed four plates together, having given exposures of 12, 8, 5, and 3 seconds respectively. We were astonished to find that there was little to choose from the resulting pictures, which were all of **excellent quality.**"

Price, 1s. per Dozen. Sample Dozen, 1s., post free.

THE IMPERIAL BROMIDE OPALS

CHEAPEST AND BEST. RAPID AND SLOW.

NOTHING FINER—NOTHING SO CHEAP.

NONE SO EASY TO WORK.

Prices, ¼-plate, 1s. 6d., ½-plate, 3s. 8d. per doz. From 1st November, Sample half doz. ½-plates only, 1s. 9d.

THE IMPERIAL DRY PLATE COMPANY, LTD.,

CRICKLEWOOD, LONDON, N.W.

Telegraphic Address—"EOTHEN, London."

N.B.—In Proof of all we say, our SALES DOUBLE each month.

THE

CADETT

LIGHTNING PLATE

Challenges the WORLD for Speed and Quality.

(SEE PRESS OPINIONS.)

THE "CADETT" LANTERN PLATE

(From Opinions of Experts) **TAKES FRONT RANK.**

AXIS

For those who want a Plate of Medium Speed and Excellence of Quality, our ORDINARY will be found to surpass in sensitiveness any on the market; in fact, when compared to the intermediate makes of other brands, IT IS THE CHEAPEST IN THE WORLD.

☞ *Photographic Work* (Oct. 21st) says: "We have received some plates of the extraordinary rapidity of 85 Hurter & Driffield, or 127 Watkins, and yet *retaining the excellent general qualities of those we previously noticed*; trial with an exposure determined by means of the actinograph fully confirming the stated speed number, which is an advance of nearly 50 per cent. on those we previously noticed." This is confirmed in a letter from Mr. Watkins, who says "they are fully as sensitive as the speed number implies, in fact they are exactly P130 on my scale. So far as I have tested different boxes of your Plates I have found the Hurter & Driffield speed numbers marked on them correctly represent their speed."

CADETT & NEALL, Ashtead, Surrey.

CHIEF DEPÔTS.

London - - W. WATSON & SONS, 313, High Holborn, W.C.

Aberdeen - G. W. WILSON & CO., 25, Crown Street.

Bradford - PERCY LUND & CO., St. John Street.

Brighton - HARDCASTLE & CO., 71, East Street.

Burton-on-Trent—R. KEENE, 52, High Street.

Dundee - G. LOWDEN, 65, Reform Street.

Edinburgh - J. M. TURNBULL, 6, Rose Street.

Glasgow - G. MASON & CO., 180, Sauchiehall Street.

Jersey - - J. RENOUF, Junr., 45, Don Street

Leeds - - - REYNOLDS & BRANSON, 14, Commercial Street.

Liverpool - J. J. ATKINSON, 37, Manchester Street,

Manchester - J. T. CHAPMAN, 7, Albert Square.

Newcastle - F. K. HURMAN & CO., 3, St. Nicholas Buildings.

Norwich - - A. E. COE, 32, Lond n Street.

Sheffield - - T. PRESTON, 4, High Street.

OTHER TOWNS IN FUTURE ADVERTISEMENTS.

Reviews.

A Photographic Tragedy. By Graham Harvey. Published by J. Guest, 1, Paternoster Avenue, E.C. Price 2d.

This little tragedy in blank verse treats of the baneful results of "Photographee" as practised by Colonel Lee, and how this gallant soldier got into trouble and appeared before a court-martial, with the final result that "when the Colonel got home he roar'd out for a hammer, a chisel, a pickaxe, and broke up his camera." In style it recalls very much some of the "Ingoldsby Legends," and it will form a very amusing little skit for post-prandial or annual smoking entertainments.

A Catechism for the People, Pastor, and Preacher. By D. Mart. Luther. A reproduction of the edition printed at Frankfort-on-Maine in 1553. Edited by W. Harry Rylands, F.S.A., Published for the Holbein Society by A. Brothers, 14, St. Ann's Square, Manchester.

This work is a splendid proof of the value of photography for reproducing with all fidelity such old books and MSS.

The work contains twenty-four woodcut illustrations, most of them, as stated in the introduction by the Editor, bearing the well-known monogram of Hans Behaim. The text includes the ten commandments, and each page is headed by a woodcut and concludes by a short examination. The Creed is next treated in like manner. Then the Lord's Prayer and the Sacrament of Holy Baptism, and then we are taught how all should learn to confess. The Sacrament of the Last Supper is followed by some shorter instructions and a small book on marriage.

The original work was lent by Mr. Bernard Quaritch, the well-known antiquarian bookseller, and the beauty and fidelity of the reproduction is of great credit to Mr. A. Brothers. If we cannot all of us have the original work, this reproduction may well take its place.

Platinotype. Simple instructions for working the cold development process. By J. T. Chapman, Albert Square, Manchester.

Mr. Chapman's little handbooks are well known, and the latest addition to these is the above simple treatise, which certainly fulfils a want, as there is no other instruction book on the subject. The directions are clearly written and should certainly be of great use to the beginner in platinotype work.

The Ilford Year Book, 1893. Published by the Britannia Works Co., Ltd., Ilford, London, E. Price 1s.

This little book is a new departure, and certainly will be very welcome. It is a neat morocco-covered gilt-edged book, and contains a brief review of 1892, and some useful notes collated from Mr. C. H. Bothamley's Ilford Manual. These notes include, the use of swing back, on focussing, stops, subject, light, exposure, hints when on tour, and notes on rational development. A diary is also given, with a week at an opening. A register of exposures and exposure tables for Ilford plates, weights and measures, and other useful tables.

Probably nearly everybody uses a diary of some kind or other, and to the amateur and professional photographer this will be very welcome, as it is exceptionally cheap and useful.

Apparatus.

CELLOIDIN PAPER.

A. and M. Zimmermann, of 6 and 7, Cross Lane, E.C., have submitted a sample of the above, which they are now introducing. This is a collodio-chloride paper, which in our hands gives very good results. A combined toning and fixing bath is recommended, and though we have not used the one specially advised we have found that rich tones are obtained either with the combined or separate baths. One great advantage with this paper is that very long washing is not essential, and the usual fault of curling may be entirely obviated by treating the print prior to toning with very hot water.

THE CADETT LIGHTNING PLATE.

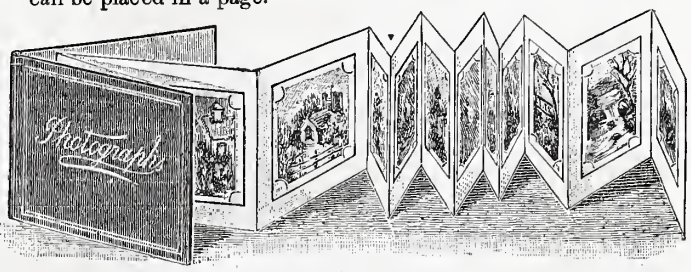
Messrs. Cadett and Neal, of Greville Works, Ashtead, Surrey, have forwarded us another sample of their Lightning plates, which register 85 on Hurter and Driffield's, which is equal to 127½ on Watkins'. This is nearly 50 per cent. greater than the plates noted by us a week or two back, and with such great speed the quality does not suffer. Given such plates as this, we really ought to be able to obtain some good winter snap-shots, and we shall look forward with pleasure to some good work if there is any skating on this year.

We have also received a sample of the Cadett lantern plate; our notice of which appears in Our Lantern Screen.

PANORAMIC ALBUM.

Percy Lund and Co., of Memorial Hall, Farringdon Street, and Bradford, are placing a convenient form of album on the market. As will be seen from the illustration, it is made on the style of the well-known panoramas, and instead of having to mount each photograph, slips are provided for the insertion of the corners. It is made in three sizes, quarter, half, and whole plate, and will form a neat and useful place to store prints, as more than one can be placed in a page.





General and Photographic Chemistry. — XI.

By E. C. Conrad, F.C.S.

THE NON-METALLIC ELEMENTS AND THEIR COMPOUNDS.—(*Continued*).

CARBON (C=12).

Oc.: Carbon, when found in the free state, is always a solid, and occurs in three allotropic forms, which are the Diamond, Graphite or Plumbago, and Charcoal. These modifications of the element differ in their physical properties, especially in hardness, specific gravity, and colour; but they each, on combustion in the air or oxygen, produce, for every twelve parts by weight taken, forty-four parts by weight of the gas carbon-dioxide. Carbon, in combination, forms an essential part of all organic compounds, and exists in large quantities, as carbon-dioxide, marsh gas, etc., and also in coal, petroleum, and other substances.

The Diamond is found in India, Brazil, South Africa, and in smaller numbers in a few other places. It is the hardest substance known, and the colourless stones constitute the purest form of carbon, leaving, on combustion, only a trace of ash; others, coloured yellow, red, green, etc., may contain from 0·2 to 0·5 of foreign matter. The specific gravity of the diamond is about 3·5; it is a very bad conductor of electricity, and although, under ordinary conditions, it is perhaps the most unchangeable of substances, yet, subject to an intense heat, it swells up and changes to a black mass resembling coal. It combines with oxygen at a much lower temperature, and appears to burn in layers. Nothing is known as to the mode in which diamonds have been formed. Diamonds which are crystallised and quite colour-

less and translucent are, after cutting and polishing, used for jewellery; there is also a crystalline variety known as "boart," which cannot be cut, but reduced to powder is used for cutting the crystallised gems and glass; an amorphous variety, of a grey colour and quite opaque, known commercially as "carbonate," is also used for cutting gems, and by Swiss watchmakers. Diamonds are sold by weight, a "carat" 3·174 gr. troy being the standard in England (carats of other countries vary).

GRAPHITE or PLUMBAGO is found in Cumberland, Scotland, United States, etc. It occurs in hexagonal plates, crystallising in a form quite distinct from the diamond. Carbon is therefore *dimorphous*—that is, it occurs in two distinct crystalline shapes. Graphite has a greyish-black metallic appearance, and is commonly called *black lead*. It is friable, and leaves a mark on paper. It is a good conductor of electricity, and has a specific gravity of about 2·2. Graphite is not so pure a form of carbon as the diamond, but it is quite permanent under ordinary conditions, and oxidises with difficulty. Its principal uses are to make lead-pencils, polish stoves, lubricate machinery, make crucibles, and cover the grains of gunpowder.

CHARCOAL is the third allotropic form of carbon, and it is *amorphous*, having no regular structure. It is obtained whenever animal or vegetable matter is heated in a limited supply of air. Where wood is plentiful, it is stacked in heaps having a hollow space in the centre, and a few holes at the base, the outside of the stack being protected from the air by a covering of earth or turf, etc.; a lighted faggot is introduced in the centre, and the heap allowed to burn itself out. If carefully conducted, a yield of from 20 to 25 per cent. of charcoal will be obtained after some days. In England the destructive distillation of wood is conducted in iron retorts, and the products, consisting of tar, acetic acid, wood-spirit, and other hydrocarbons, are collected, and a residue of charcoal is left in the retort. The shells of cocoa-nuts give the most porous variety. Oils or fats give, under the same treatment, *lamp-black*, used as a pigment. Bones produce *bone-black* or *animal charcoal*—a porous mass of calcium phosphate and finely-divided charcoal, largely used in sugar-refining for removing the colour from the syrups. Charcoal has a specific gravity of about 1·5 but floats in water on account of the air enclosed in the pores. Besides the uses given above, charcoal is used as a disinfectant, the gases evolved during putrefaction being absorbed by the powdered charcoal and oxidised by the oxygen, also absorbed by it from the air. Charcoal obtained from cocoa-nut fibre can absorb about fifteen times its own volume of oxygen and carbon-dioxide; ammonia and other gases to a much larger extent.

COAL is a form of carbon that has been produced naturally from vegetable matter, and is much more impure than charcoal, containing oxygen, hydrogen, and nitrogen, and also having become bituminised during its formation. The following percentage composition is of interest in showing the gradual relative increase of the carbon in the decay and compression of oakwood:—

	Carbon	Hydrogen	Oxygen and Nitrogen.
Oakwood	50	6	44
Decayed oak	53	5	42
Peat	60	6	34
Cannel or Wigan coal ...	83	6	11
Caking or Newcastle coal...	88	5	7
Anthracite or Welsh coal...	93	3	4

Coals always leave, on combustion, a large amount of ash—sometimes as much as 30 per cent., and rarely below 10 per cent. This ash usually consists of the oxides of silica, aluminum, and iron. Sulphur is always present in coal, but is given off on heating, burning to sulphur-dioxide.

COKE is the residue obtained when coal is subject to destructive distillation. *Gas-carbon* is a very hard variety of coke obtained from gas retorts; it is used to form the negative poles in a Bunsen cell.

COAL GAS, so largely used for lighting, heating, etc., is produced by heating coal in closed vessels called retorts. The coal decomposes, and forms a large number of different compounds—gases, liquids, and solids—most of which distil over, leaving a residue of impure carbon or coke. The products of distillation vary with the temperature—the higher the temperature, the more gaseous compounds are formed; while a low temperature produces more semi-liquids or tars. Hydrogen, methane, nitrogen, oxides of carbon, hydrogen sulphide, and such hydrocarbons as ethene, propene, etc., are the principal gases. The liquids are water, carbon-disulphide, benzene, phenol, etc., and the solids are various compounds of ammonia and paraffin, napthalene, etc. These and other compounds issue from the retorts, and are led through iron pipes and cisterns, in which the liquids and solids separate out, and the gaseous products, after being purified by slake lime or oxide of iron and sawdust from as much of the hydrogen-sulphide and carbon-dioxide as possible, are collected in gasometers (inverted iron chambers standing in water). The value of the gas as an illuminating body depends on the presence of the hydrocarbon gases mentioned above, while its heating properties are principally supplied by the uncombined hydrogen and the methane, which together constitute about 80 per cent. of the total quantity. It is essential that as much of the compounds of sulphur as possible should be separated from the gas, because they rapidly attack metals, pigments, and the other decorative fittings in houses, and are also injurious to health.

Composition of Flame.—If the flame of a candle (which is simply the compounds composing it heated to incandescence) is examined, it will be seen to be divided into four unequal cones:—(*a*) That at the base of the wick being light blue in colour and of small area; at this point the combustible material, being in contact with the air, has sufficient oxygen to burn it completely, and produces a hot, non-luminous section of flame. (*b*) This cone is situated above the last, and surrounds the wick; it is of a dark colour, and is composed of vapours distilled from the wick, and the products of combustion of cone *a*—viz., water, oxides of carbon, and nitrogen from the air. (*c*) The third cone is above and also surrounds *b*, and is composed of the hydrocarbon vapours of that cone heated to incandescence; it is this portion that gives nearly all the light. (*d*) The last cone is of a yellow colour, and surrounds *c*, being formed by the combustion of the constituents of the luminous cone in the air. All luminous flames have these cones, although their relative areas often vary considerably. If a stream of air from a blow-pipe is directed into such a flame, its luminosity is destroyed, but it is rendered much hotter; this is due to the increased supply of air enabling the carbonaceous matter to burn much quicker. A blow-pipe flame is composed of two cones—first, an inner one of a blue colour, which still requires oxygen for its complete combustion, and is called the *reducing* flame, because many metallic oxides are decomposed or reduced by it; second, an outer flame of a darker colour. At this point all the combustible compounds are completely burnt, and there is an excess of highly-heated oxygen, and this portion of the flame is therefore called the *oxidising flame*, because many substances are burnt to oxides by it. The *bunsen lamp* gives a flame of this description, and consists of a small jet surrounded by a larger tube provided with several holes for the admission of air. The gas and air mix in this tube, and burn at the top with a non-luminous flame.

(*To be continued.*)

OUR LANTERN SCREEN.

A Monthly Supplement to the "Amateur Photographer."

No. 1. **OCTOBER 28, 1892.**

Our Dissolving Views.

THE appearance of "Our Lantern Screen" will, we think, be heartily welcomed by all our readers, and we trust that the verbal pictures we may throw on the same will be found chatty, readable, and instructive. Our Lantern Supplement will be published on the fourth Friday of each month during the winter season, and form part and parcel of our regular issue, the price of which will remain the same.

We ask the cordial co-operation of all our readers, the Secretaries of societies, etc., in making this new feature of our paper a success.

IN conjunction with "Our Lantern Screen," we have also commenced a series of Monthly Lantern Slide Competitions, and the following are the conditions, etc.:—

PRIZES.

First Prize	Silver Medal and Clasp.
Second Prize	Bronze ,, ,,
Third Prize	Certificate.

Each competitor must send in two slides. The slides must be mounted and be properly marked, and bear the title of the picture legibly written on the face of mask. Any slide not properly marked will be disqualified. The marking, which must be adopted, is that most general, viz., two spots (white or coloured) on the face of the mask, which said spots should be placed downwards next the condenser in the lantern, so as to show the slide the correct way on the screen.

Past prize winners of the Gold and Silver Medals in our Annual Lantern Slide Competion, or past winners of the Silver Medal in our Monthly Lantern Slide Competitions, are disqualified. Any competitor winning a Silver Medal will be disqualified for any subsequent competition, but if competing he may be awarded an extra silver bar for the ribbon. Winners of the Bronze Medal or Certificate can only compete for the higher prize or prizes in subsequent competitions.

The slides of competitors which do not gain a prize will be divided into three classes according to merit, and the competitor's names, etc., published in the next number of "Our Lantern Screen."

Winners of the Silver Medal must supply to the Editor on demand an unmounted print from the original negative from which the lantern slide was made.

All slides entered for competition to become the property of the AMATEUR PHOTOGRAPHER.

SUBJECTS AND LATEST DATES.

Landscape, with or without figure	Nov. 12th.
Sea Pieces and River Scenery	Dec. 17th.
Portraiture and Figure Studies	Jan. 14th.
Instantaneous Work	Feb. 11th.
Architecture (exterior and interior) ..	Mar. 18th.

Entry forms, etc., may be had by forwarding a stamped addressed envelope to the Editor.

WE shall hope to have a hearty support to "Our Lantern Competitions." We, on our part, will endeavour to give every assistance to competitors. The winning slides we hope to reproduce with criticisms on the same, and each competition will give us the text for a brief article on the faults noticeable.

THE slides will be available for loan to societies immediately after the appearance of the number of "Our Lantern Screen" in which the awards are announced, on payment of the usual booking fee.

THE notice for our first competition, which closes on November 12th, is rather short, but there will, we think, be no difficulty in this respect; it will, at any rate, be fair to all.

IT has been suggested to us that it is unfair to allow a competitor to take a prize for a lantern slide made from a negative a print from which has been awarded a prize in any of our print competitions. But we would point out that it is not unfair provided the competitor has only just begun to make lantern slides, and should it happen that the judges award a prize to a lantern slide from such a negative, we shall require a declaration from the competitor that he or she has commenced lantern slide making within six months.

THE following is the itinerary of the AMATEUR PHOTOGRAPHER 1892 Lantern Slides. We regret that owing to the very late application for the same by some Secretaries, we have not been able to avoid long journeys in some cases.

1892.		1893.	
Oct. 13	Birkenhead	Jan. 2	Richmond
,, 14	Shrewsbury	,, 6	Blackburn
,, 18	Birmingham	,, 10	Phot. Soc., Ireland
,, 21	Burton-on-Trent	,, 13	Munster
,, 25	Delph	,, 19	Gloucester
,, 27	Liverpool	,, 20	Hereford
,, 29	Douglas, Isle of Man	,, 23	Devonport (Cam. Club)
Nov. 3	Barrow	,, 24	Plymouth (Graphic)
,, 5	Chorley	,, 25	Devonport (R. N. Col.)
,, 9	Kendal	,, 30	Todmorden
,, 11	Carlisle	Feb. 2	Stockton
,, 14	Ulster	,, 4	Whitby
,, 15	Belfast	,, 7	Newcastle
,, 18	Preston	,, 8	Durham
,, 22	Rodley	,, 9	Sunderland
,, 24	Louth	,, 10	Tyneside
,, 28	King's Lynn	,, 11	Haltwhistle
,, 29	Peterborough	,, 14	Sunderland
,, 30	Yarmouth	,, 17	Selby
Dec. 3	Hull	,, 18	Bootham
,, 6	Wolverhampton	,, 20	York
,, 8	Wigan	,, 22	Stockport
,, 9	Warrington	,, 23	Oldham
,, 13	Manchester	,, 24	Lancaster
,, 16	Lewisham	,, 27	Sheffield
,, 19	Blackheath	Mar. 1	Crewe
,, 20	Faversham	,, 3	Walton
,, 22	Hastings	,, 6	Accrington
,, 23	Maidstone	,, 7	Keighley
,, 27	Guildford	,, 8	Wakefield
,, 28	Brighton	,, 9	Huddersfield
,, 29	Sutton	,, 14	Hove
,, 31	Polytechnic, London, W.	,, 15	Eastbourne

Mar.	18	Leytonstone	April	10	Cheltenham
,,	21	Sydenham	,,	13	Torquay
,,	22	Woolwich	,,	14	Pudsey
,,	24	Brixton	,,	15	Oxford
,,	28	East London	,,	21	Glasgow
April	3	North Surrey	,,	28	West London
,,	5	Ramsgate	May	1	Kensington
,,	8	Cirencester	,,	9	Bolton

WE are glad to hear that wherever the Slides have yet been exhibited, they have given every satisfaction and gained golden opinions.

ADVERTISING is now a very important item, and one of the comic papers this week shows two explorers traversing some fearfully desolate spot far from civilised countries, and one congratulates the other that here at least they have reached a point never before trodden by the foot of man. In the next picture they are depicted as horror-struck, on reaching a rock under which they wished to take shelter, and finding painted on the same a recommendation to try somebody's patent food.

THIS, no doubt, is bad enough, but really it is getting a serious matter when we hear that some experimenters have been successful in projecting advertisements upon the clouds by means of a very powerful optical lantern. This will be too bad. We shall probably find shortly when we go out for a walk of an evening that the whole sky will be a huge advertisement board, and we shall see a blank space with the words "To let" projected on the same. Worse still, these sky spoilers are really going to make their own clouds when there are no natural ones.

OUR publishers will issue at the end of next week a new and complete work on lantern-slide making, called "The Lantern Slide Manual," by Mr. John A. Hodges. It will be found very easy of comprehension, very practical, and an indispensable adjunct to every lantern-slide maker's library.

How valuable the optical lantern may be made is a fact but rarely recognised by the many. The Brechin Photographic Association will have an exhibition of slides on December 14th, illustrating the manufacture of linen.

ANOTHER example of the value of lantern slides is the set by Mr. Freshwater on bee culture shown at Pall Mall. Why these did not receive a medal is a question which has been asked once or twice. That they thoroughly deserve one is recognised by many.

WE shall be glad to receive any hints or suggestions from our readers as to this Supplement, or to receive any short papers bearing on lantern topics for consideration or insertion.

Flashes.

THE latest novelty in the lantern world—"Our Lantern Screen.'

Is the idea of the Supplement original, or did the Editor s——, I mean borrow it?

SUPPOSING he did—what then? Aren't we better off for having more paper even if we don't get any more to read?

THE Editor is real mean; he says he is going to disqualify me from entering his competitions because I am an old hand. Well, I have only made slides for the last six years, and never having got a medal yet, it's too bad. I shall write to the AMATEUR PHOTOGRAPHER about it.

To make matters worse, when I was asked to turn on the oxygen he said he should like to see some of my work, and he sends back the slides and says:—

DEAR OXYGEN,—I really think you might compete, as I am quite sure nobody else would stand a chance of winning——"

And here I had to turn over the page, and whilst doing so, felt at least three inches highor. I turned over, and he was mean enough to wind up by saying "the wooden spoon."

Was I mad? Oh no, it's no use getting angry with the Editor he has a happy knack of dropping you or your letters in the waste-paper basket, and sending you a card to that effect. But didn't my wife, children, and the servant suffer for a day or two! My wife, Hydrogen, wants to know what was the matter, and had serious thoughts of applying for a regulator for me, but I'm better now.

I SEE there has been a good deal of discussion as to the awards in the AMATEUR PHOTOGRAPHER 1892 Lantern-slide Competition, and whilst there is a good deal of fuss about nothing, I really think there is some cause for complaint, if I may say so, with one or two competitors. But surely we are snarling unnecessarily when we feel aggrieved at Mr. Hodges taking a medal. I always thought the annual competitions were to show annual progress, and the monthly ones for young workers.

HOWEVER, I was talking about friend Hodges, who, by the bye, I see has been elected President of the West London Photographic Society. So far as I can recall, he has not won everything, and no one can accuse him of being a pot-hunter. Of course, I don't mean to insinuate for one moment that anybody else is; oh no! not at all. Well, why should he not win a medal? Because he professes to instruct us, somebody says. Well, so much the better, and, in the face of his silver medal, I have read with far greater relish his "Lantern Slide Manual," an advance copy of which the Editor has sent me. His medal is at least proof that he can apply what he writes about, and the sterling instruction he gives is worth anybody and everybody's close and careful study. I strongly advise all would-be lantern-slide makers to get a copy as soon as it is published.

WHILST I am on this subject let me congratulate the Editor, the competitors, and all those who will see the slides, upon the high excellence of work which they show. I went to Pall Mall on the 8th of this month, when they were passed through the lantern and described by the Editor, and they really are fine. I don't wonder that I should be told that I should take the wooden spoon.

HOW much depends in a lantern show upon the lecturer! Some men seem to speak in their beards, or else through their noses. Others you can't hear at all, and when asked to speak up they squeal and make matters worse. It's a pity that our Editor can't be sent round in the box—no, I mean can't go round with the slides—because he can make himself heard. But there, he's an old hand at speaking in public; I can remember hearing him lecture more than ten years ago, though no photography when I was a young hand at chemistry.

I WANT our generous friend, the Editor, to make a small innovation and open his purse-strings still wider. He tells me he is going to institute slide competitions, and I want him to award marks to all competitors, and those that gain the highest total in the whole of the competitions to receive some reward. How nice it would be, now, if I was the lucky man to gain the highest number of marks, and I got a nice aluminium-gold-mounted biunial lantern with diamond lenses. Shouldn't I be proud of it? Seriously, though, wouldn't some such plan as this prevent flukes and reward honest, hard work?

I HAVE been seriously warned that my "Flashes" are getting too long or too frivolous, and that evidently there is no chance of the supply failing, so I incontinently turn off the

OXYGEN.

The Pall Mall Show still keeps up its average of attendance, which was 1,542 for the week ending 15th inst., making a total of 3,264 since the opening of the exhibition.

Experiments with the Optical Lantern.

A FEW months back Mons. H. Fourtier gave at the Photographic Club in Paris a most interesting lecture, setting forth the great benefits to science afforded by the use of the optical lantern.

After detailing a brief history of its nvention and improvement, M. Fourtier enlarged upon its innumerable resources, enabling large luminous images of photographs to be exhibited to numbers of people; and it is not only confined to this pleasurable application, but is also of enormous interest and value in projecting on a screen magnified representations of natural phenomena—the minuteness of these phenomena causing the greatest surprise, allowing us to grasp, by the aid of the lantern, the marvellous working of all these infinite forces, the combination of which around us constitutes the splendid work of life.

M. Fourtier dealt only with picturesque science and of that branch of science of which the sovereign mistress is photography, and he proceeded with his audience to analyse some of the reactions produced in the course of its operations.

M. Molteni, a very able and skilful operator, then placed in a lantern made for the purpose, a tank filled with a solution of sea salt—the chloride of sodium of the chemists—of which no image was formed on the screen; but this became visible upon the addition of a small drop of a solution of acetate of silver placed on the surface of the solution, when a double decomposition took place, the chloride embracing the silver and forming a salt, insoluble and heavy, which was precipitated in elegant shapes, and slowly descended to the bottom. M. Fourtier remarked that although the precipitate, on account of its opaqueness, was represented on the screen as being black, it was in reality of a beautiful white. A small quantity of acetate of silver was then added to the liquid and agitated; and now the screen took a greyish tint. Into this muddy-looking liquid, with another small tube, a solution of hyposulphite of soda was injected, and everywhere on the passage of the reagent the chloride of silver decomposed and passed to the state of soluble hyposulphite.

The various salts, and in particular the metallic salts, give place to precipitates as mentioned above; and a number of them being coloured in characteristic fashion, the colours produced by the reactions enable the chemist to rapidly distinguish the bodies with which he is dealing.

A tank was then placed in the lantern, filled with an important reagent, the yellow ferro-cyanide of potassium, and with the aid of a small tube, a drop of a solution of salt of iron was injected, when immediately a precipitate was formed of a beautiful blue, known so well under the name of Prussian blue.

If a drop of a salt of copper solution is mixed with the pure reagent, a typical reddish precipitate will be formed. These two very characteristic reactions allow the chemist to recognise the presence of one or the other metal in an unknown solution; and it should be particularly noted that the reaction takes place even when the metal is in very feeble proportions.

M. Molteni now placed in the lantern a tank containing litmus, a much employed reagent, extracted from certain lichens which grow principally in the Canary Islands, and on the screen formed a bluish-violet image, the normal colour of litmus. Upon a drop of acid being allowed to fall in the bowl, the colour of the litmus immediately changed to red. This very perceptible reaction permits the acidity of the solution tried to be immediately recognised A drop of ammonia now being put in the tank, the blue colour immediately reappeared. Litmus, therefore, is a reagent which allows the recognition both of acids and alkalis.

Aniline colours were the next subject dealt with, the lantern projecting on the screen an example of magnificent carmine. Chemistry, has, indeed, furnished industry with a marvellous palette in the aniline dyes, whose beautiful colours are all extracted from coal; but unfortunately these colours in many of their varied tints are sometimes extremely delicate and fugitive; and the ladies, no doubt, have good reason to execrate the chemistry which gives them such unstable colours.

Precipitates: Acetate of Lead.—A tank containing a perfectly transparent poisonous solution—acetate of lead—was next placed in the lantern, and a small drop of ammonium chloride solution placed on the surface. Immediately a precipitate (as in the previous cases) of chloride of lead was formed; and this, on account of its weight, gained the bottom of the bowl very quickly, and produced long streaks resembling a veritable display of fireworks. These reactions which give birth to precipitates frequently cause very curious manifestations.

Decomposition of Water.—The next study approached was the decomposition of liquids and salts by the electric current, a science which Faraday studied very completely, and which he gave the name of Electrolysis.

M. Molteni now placed in the lantern a tank filled with water, and containing two platinum wires in communication with an electric battery. The current was made to pass, and immediately there appeared, seemingly engendered by the platinum threads, a number of small black points, which were in reality bubbles of gas. It was noticeable that some of these bubbles were extremely small, whilst others large in volume, and we therefore draw the conclusion that water is formed of two gases; and if further experiments are made, and the gases gathered, it will be found that one, by its causing so much activity to combustion, is oxygen, and the other, by its combustibility, is hydrogen; and H_2O is the correct formula of water.

If the current is reversed the opposite effect is produced, and the thread to which the hydrogen bubbles attached themselves now collects oxygen, and *vice versa*. This experiment was first made by Carlisle and Nicholson in the beginning of the present century. It should be noted that hydrogen is attracted to the negative pole, and oxygen to the positive pole.

The Occlusion by Palladium.—M. Fourtier, in continuation of the above experiment, now dealt with the occlusion of palladium, a bluish-white metal, somewhat similar to silver, discovered by Wollaston in 1803. This metal has the curious property of being able to absorb 966 times its volume of hydrogen. M. Molteni placed in the lantern a tank filled with water, and containing two conductors, one of platinum, quite straight, and the other of palladium, in the form of a spiral, the exterior surface of which was varnished. The current was now made to pass in such a manner that the negative pole was on the palladium.

Now around the platinum appeared bubbles of oxygen, but nothing was visible near the palladium, this metal absorbing the hydrogen, as produced, causing the spiral to gradually unroll. Upon the current being reversed, the hydrogen disengaged itself from the platinum, and the oxygen chased the gas absorbed by the metal, which at once took its original form.

Electrolysis of Salts.—M. Fourtier now resumed his treating of the electrolysis, and remarked that Faraday demonstrated that when a salt, *i.e.*, the combination of an acid and a base, is submitted to the influence of an electric current, the base attaches itself to the negative pole, and the acid to the positive pole, a means admirable in its simplicity, of analysing any sort of chemical combination.

M. Molteni placed in the lantern a tank filled with water and containing a U-shaped tube in which was placed a solution of neutral sulphate of potash coloured blue with litmus. Two platinum wires, one in each branch of the U, conducted the electric current which was made to pass; little by little the solution in one of the branches coloured rose, whilst that in the other remained blue. Upon reversal of the current, the colouring was also reversed.

The Electrolysis of Lead.—This marvellous property of the electric current has given birth to an industry, electroplating, which renders us daily enormous services. The discovery was made in 1837 by a Russian, Doctor Jacobi, who studied a Daniell cell with the view of applying electricity to the propulsion of a boat, when he recognised that the sulphate of copper in the interior of the cell was decomposed, the copper in a metallic state having moulded itself on the negative pole with extreme fidelity. In pursuing his experiments, Jacobi plunged in the solution of a metallic salt, a mould formed of gutta-percha, a non-conductor of electricity, to which the crude conductors were attached by the aid of solder. He fixed the mould to the negative poll of a cell, whilst the positive pole was formed of a sheet of metal contained in the salt. The current little by little decomposed the salt, and deposited on the surface of the mould a pellicle of metal, which shaped itself with a surprising and unprecedented delicacy. The pellicle once formed, it was separated from the mould, and thus a perfect facsimile of the original was obtained. It is by these means that objects of art are at the present day reproduced, and silver ware covered with a thin pellicle of gold; iron goods with a layer of nickel, etc.

M. Fourtier regretted that on account of the operation requiring several hours he could not give a practical demonstration of the formation of the electrolytic deposit of copper. He, however, reproduced the experiment on a more rapidly decomposable salt, that of lead, with which a tank was now filled, and also contained two electrodes, the extremities being branches of platinum. Upon the current passing, the tree-like branches on one of the electrodes were immediately covered with a rich metallic vegetation, whilst from the platinum branches of the other pole seemed to come liquid streams, which appeared on the screen in undulating lines, on account of the difference of density of the two liquids.

Upon reversing the current, the first "tree," little by little, was stripped, and the second "tree" now covered itself in its turn with a metallic foliage.

Diffusion of Liquids.—M. Fourtier remarked that his audience had probably been able to notice in the course of his experiments the curious forms taken by acids diffused in the middle of saline solutions; and for illustration he injected into a tank filled with water a

drop of a coloured liquid, which at once produced tiny spirals and anodes, which expanded and penetrated each other in a most interesting fashion.

It is not absolutely necessary that the liquid should be coloured in order to observe the phenomena; it is sufficient so long as the liquids have different densities. Into a tank of water was placed a small piece of ice, and the cold liquid streams, denser than the remainder of the water, transformed themselves immediately into tiny spirals twirling capriciously.

Capillary Attraction.—Another phenomenon, or perhaps rather a force, which is constantly employed around us is capillary attraction. It is in a great measure owing to this action that the vital forces act. It is this which makes the sap mount in plants; and again, that which causes the oil to rise in our lamps. One of the principal laws of capillary attraction is the more a liquid finds itself pressed between two sides which it cannot soak into, the more it rises notwithstanding the general law of the level of liquids. Two sheets of glass, making between them an acute angle, were placed in the lantern; also a tank of brightly coloured liquid, and directly the level reached the bottom of the glass it rushed up quickly, mounting in proportion as the gases were brought nearer to the point of contact.

Crystallisation.—M. Fourtier now proceeded to a class of experiment of great interest. Of course, it is known that salts present themselves to us in geometric forms called crystals. When the water, which has served to dissolve a salt, evaporates, crystalline forms are gradually seen to form.

On a sheet of glass M. Fourtier now placed a saturated solution of a salt. Of this no image formed on the screen; but gradually one "needle" appeared, followed by a second, ultimately giving birth to those capricious designs which the frost sometimes traces on our windows. But for the chemist, the form of the crystal, unalterable and characteristic, permits him to recognise with what body he is dealing. This experiment could be varied in a thousand ways.

Movements of camphor.—M. Fourtier then passed to an entirely distinct phenomenon which has exerted in vain the wisdom of would-be discoverers, and of which the theory does not seem yet to be perfectly established.

M. Molteni placed on a special lantern apparatus for horizontal projections, a bowl with a transparent bottom and filled with water; on the water some camphor in fine powder was thrown; immediately all the little crystals were animated with a strange gyratory movement. What is the force which puts them in motion? Is it the vapour emanating from the camphor which strikes the water, and by reaction makes the little crystals whirl round? Are these electric manifestations, as some have supposed? At all events, immerse the end of your finger in the bowl, and immediately all movement ceases; draw out your finger and the corpuscles take up again their mysterious movement.

Development of a plate.—The horizontal tank being at hand, M. Fourtier employed it to project on the screen the chief experiments of the photographic life, the development of a plate.

M. Molteni furnished the lantern with a yellow glass, thus modifying the light, which was then without any action on the sensitive plate employed. The glass was placed in contact with a negative and exposed to the light. This being finished, a developer was poured on the horizontal tank, and the plate (on which it was shown there was no image) was introduced. The reagent acted and slowly little by little the high-lights appeared and the image was finally completed. It was shown that the plate was finished, but in some way veiled by the unimpressioned chloride of silver. M. Fourtier asked his audience to recall that at the commencement of his lecture it was shown that hyposulphite dissolves unimpressioned chloride of silver. The developing bath was therefore removed and was replaced by one of hyposulphite. The plate was shown when half cleared, and finally when entirely clear.

The Microscope.—M. Fourtier then proceeded to show another transformation of the optical lantern; not a new invention, but one which was made in the middle of the last century by Lieberkuhn, a Swedish savant, who had the idea of brilliantly lighting by the aid of the sun infinite organisms, and to enlarge them with a special microscope which projected a very large image of the objects on a screen. To accomplish this, in place of the ordinary microscope which is such a personal instrument, a disposition was substituted so that a great number of people at a time could observe the image. Thanks to the present intense lights, we are no longer at the disposition of Phœbus, and M. Fourtier then proceeded to show with what delicacy and what infinite pains Dame Nature has treated even the most infinite atoms. His instrument permits the study of the intimate structures of the three kingdoms, such, for instance, as the characteristic difference between the crystals of saltpetre and boric acid, which are clearly defined, thanks to the enlargement. Of the animal kingdom was shown an enlarged image of an enemy of our repose, and in spite of all we cannot help admiring the natural formation so well accommodated to its life; its two legs, such powerful levers which enable it to execute such rapid and plentiful work; its mouth strongly armed with piercers and suckers, of which we have experienced the smarting but sure functions.

M. Fourtier then took up the feather of a humming bird, of which the delicate featherettes are so correct in design, and thus cause our admiration. Every feather is terminated by a little hard appendix, which decomposes the light by a sort of phenomenon of interference, and gives by its many combinations the changeable tints we admire so much in the bird.

In the vegetable kingdom a fragment of a geranium petal will inform us of the geometric structure of the tissue of the plant. A series of hexagonal cells constitute this leaf which our eye, unpowerful, considered to be an united surface.

M. Fourtier then showed some eels in paste and somewhat mummified, in balsam of canada, and then what seemed to be monstrous crabs with enormous claws, but which were in reality cheese mites. M. Fourtier remarked that he thought this time we should be ungrateful to complain of our feebleness of sight, and he asked if it were not better to be able to ignore all these formations in our food.

The optical lantern lend itself easily to a number of experiments in the physical kingdom, which it was not possible for Mr. Fourtier to abridge in his lecture. He however, contented, himself with showing some of the phenomena of light, which furnish a great deal of wonder, and then proceeded to deal with the spectrum, and the analysis of white light. In the course of the rays emanating from the lantern, was placed a very narrow slit, so as to reduce the rays to a thin, flat sheaf. This bundle or sheaf of rays was taken up by a lens, which concentrated them on a prism, and immediately spread as a magnificent cloth of a thousand colours placed in regular order. This was the solar spectrum of seven principal colours arranged in the following scale. Violet, indigo, blue, green, yellow, orange, red. This order should be particularly noted, as it will be of assistance later on. M. Fourtier did not expand on the theory of light, remarking that the spectrum is composed of rays of various colours of which we perceive only a part. At the side of the red, for instance, spreads a long band, dull to us, but characterised by considerable calorific effects. By the side of the violet also a large band unperceived, but very capable of chemical effects. It can be proved easily by moving in the darkened part outside the violet, a bottle filled with a solution of sulphate of quinone, and immediately the liquid will take a violet fluorescence very noticeable. Put then a piece of blotting paper imbibed with this salt, and the paper will be illuminated with a very characteristic lavender.

It is perfectly admitted after numerous experiments that the spectrum presents three maxima of intensity, having their own character; towards the external of the violet the maximum of chemical intensity, upon the yellow the maximum of luminous intensity, at the extremity of the red the maximum of calorific intensity straightly placed one within the other, and one of these manifestations cannot be produced without the others being more or less visible.

M. Fourtier only occupied himself with the luminous manifestations, and remarked that the savants had sought to reduce the seven colours of the spectrum to three fundamental tints. Brewster proposed red, yellow, and blue; Young Helmholz—and this is the actual theory recognised—that the veritable three were red, green, violet. M. Fourtier gave an example of Newton's method to prove that the mixture of the seven colours makes white, although there are several means of doing this. On a disc divided in sections in proportion to the space occupied by the various colours, were painted two or three spectrums. This disc was made to turn round rapidly, and on account of the slowness of the fading of an image perceived by our eyes, the colours mix and the coloured disc vanished, giving place to the impression of white light. But it is not necessary in order to produce white light to have recourse to the combination of the seven colours; it has been recognised that two colours—not neighbouring—can by their mixing produce white when they are properly chosen.

M. Fourtier showed a disc half green and half red, which was made to turn rapidly, and gave a sensitiveness with the double lantern. Two luminous patches were projected on the screen, one green, the other red, and upon the patches being mixed the sheet remained white. M. Fourtier now turned his attention to the problem of stereoscopic lantern projections solved by D'Almeida in a very curious fashion. If the two stereoscopic images of an object are projected one on the other, the images not being superposable a troubled view will be obtained. But brighten one of them with red light by interposing a coloured glass and the other with green light. The image will not yet have gained, and will seem to be a mixture of red and green. But on taking two small pieces of glass, one red and one green, putting the red one before the right eye and the green before the left eye, the view immediately becomes clear and the stereoscopic effect is produced.

The Oil-lantern and its Manipulation.

By John A. Hodges.

Incredible as the statement may seem, it is nevertheless a fact that many amateur photographers who devote a considerable amount of time to making lantern-slides do not possess an optical lantern. That this should be the case is very much to be regretted, for not only do they place themselves at some disadvantage in not having the means of privately testing the quality of their slides before submitting them for public criticism, but they lose a great deal of the enjoyment which the private exhibition of the slides to their home circle would confer.

A great many are doubtless deterred from purchasing a lantern because they do not understand the use of the limelight, and are under the impression that an oil-lit lantern is inefficient, and dirty and messy in use. It is to remove this stigma from a much-abused type of instrument, and to show how really good results may be obtained with it, that I have undertaken to write this article. But to be quite candid I must begin by making the unfortunate admission that in careless hands an oil-lantern may fully deserve the unenviable reputation which in some quarters it has gained.

First, with regard to the instrument itself. If a good article is required a reasonable price must be paid for it. A demand for a low-priced lantern has arisen, which has, not unnaturally, been responded to by the manufacturers. Now, I do not want to say a word against cheap lanterns, as such—the only wonder to me is how so much value can be given for the money—but the weakest part of a cheap lantern is generally to be found in the lamp, and if only a very small outlay can be afforded I think the best plan would be to procure a lantern of a cheap type minus the lamp, and have it fitted with a lamp of good construction, such as Stocks', Hughes', or Newton's. I do not, however, advise this being done in preference to buying a well-made lantern and lamp complete, which will be found, perhaps, the cheapest plan in the end. Nor do I recommend those who are not familiar with lantern matters to purchase one of the second-hand bargains (?) which are constantly advertised. If the assistance of an expert can be obtained, well and good; if not, the buyer is more than likely to repent of his bargain. The lantern must, of course, be of the modern pattern, and not of the old phantasmagoria type, which is useless for the projection of photographic slides. I mention this because more than one amateur slide maker of my acquaintance has been deluded into buying a "bargain" of this nature. The lamp should be what is known as a "four-wick" one. There are a few people who still maintain that a two-wick lamp will give as much illumination as one with four wicks, but such a statement is either due to ignorance or a deliberate intention to pervert the truth. I have taken a great deal of interest in the matter, and have actually compared the brilliancy of different makes of lamps, with the result that I found that a three-wick lamp gave more illumination than a two-wick, and a four-wick more than either. Curiously enough, a five-wick lamp, which was tried at the same time, appeared to give no further increase of illumination, and the tendency to smoke was also greater. There are several excellent lamps in the market, the merits of which I do not for a moment seek to disparage, but at the risk of being accused of giving a gratuitous advertisement, I cannot help drawing attention to Stock's patent lamp, which I consider to be a distinct improvement in lamps for lantern illumination. The light given by it is remarkably intense, and white in colour, due to the very perfect combustion, but its novel feature consists in a mechanical device whereby the chimney can be raised or lowered in height. The higher the flame can be turned the greater is the illumination, but when the smoking point is reached in an ordinary lamp the flame has to be lowered, and the light is consequently reduced. In Stock's lamp it is not necessary to lower the flame, for by increasing the height of the chimney the tendency to smoke is overcome by the increased draught.

A little attention to one or two matters of detail in the manipulation of the lamp will remove one of the popular prejudices against its use. In the first place only the best oil should be used. In the words of a popular advertisement, not only ask for it, but see that you get it, for, irrespective of price, inferior oils are often palmed off upon the unwary. A good oil should be free from smell and colourless. Care should be taken, in filling, to avoid spilling any oil upon the reservoir, which after filling should be carefully wiped with a clean, soft dry cloth. Smell from a lamp is caused either by imperfect combustion, evaporation of oil spilt upon the lamp, or by the use of an inferior oil. After use the oil remaining in the lamp should be drained out, and the wicks removed. It is very important to have good quality wicks, and it is generally safer to procure them from the maker of the lantern, as those obtainable from the oil shops are often of inferior quality. They should be cut to about eight inches in length with an old razor, and when inserted in the lamp should be exactly level with the tops of the wick chamber; the least irregularity will result in forking of the flame and a consequent loss of light. After having been in use, it is better to trim them by carefully rubbing off the charred edges with the thumb and finger, rather than attempt to cut them with the scissors. If the extreme corners are cut off each wick, the tendency to forking out of the flame at the edges, which sometimes occurs, will be obviated. The lamp should be lighted with a wax taper, and not with a wooden match or paper spill, for any charred fragments of the latter falling on the lamp will, when it becomes hot, give off an offensive smell. The wicks must, after lighting, be kept quite low for at least five minutes, or until the lantern and lamp get quite warm, and then at short intervals they should be raised until the smoking point is reached. The lamp will be working at its best when just short of though not actually smoking. Each wick must then be gently lowered until the smoking ceases, or, if Stock's patent lamp is used, the chimney must be extended until the same effect is produced. The best result will be attained by keeping the two central flames a little higher than the outside ones. When the lantern and lamp get thoroughly hot, the flames will rise higher, and probably begin to smoke; if they are then manipulated in the manner described, they will probably not require further attention during the time the lantern is in use. It is sometimes recommended to dissolve camphor in the oil, and at one time I used to do so, but I am convinced that more harm than good results, for the camphor greatly increases the tendency to smoke, and, moreover, in time, clogs up the wicks.

I do not propose now to deal very minutely with the other parts of the lantern, but a word or two on the objective may not be out of place. The objective usually supplied with a lantern of the type under consideration is a quarter-plate portrait combination, generally of French make. A similar lens, but with a larger back combination, is often recommended by the dealers. The advantage is a slightly greater brilliancy of image on the screen, but, on the other hand, the marginal definition, unless the lens be an expensive one, is not nearly so good. I, therefore, recommend in preference a lens of the ordinary type. Both the condenser and the objective should be gently polished with a piece of soft washleather before the lantern is used; and the condenser, wrapped in a piece of old flannel, should be warmed on the stove before the lamp is placed in the lantern. The latter is a necessary precaution in cold or damp weather, to avoid fracture.

The next essential matter to be considered is the lantern screen. Now a good many people who use a lantern for the first time think that anything white will do for a screen, and a sudden demand upon the household authorities generally results in the production of the worst sheet the linen press contains. Generally, more or less crumpled, pulled taut at the top, quite loose at the bottom, and waving to and fro with every breath of air, it is not to be wondered at that under such conditions the exhibition is not the success which was anticipated. There are two kinds of screens used—opaque and transparent. Dealing first with the former, I may remark that a whitewashed or distempered wall affords the best possible screen for use with an oil, or, indeed, any other lantern. The wall being absolutely opaque, no light is lost by transmission, as is frequently the case with ordinary screens. Therefore the best plan to adopt where a large room or nursery is available, is to have the paper stripped from one end wall, and replaced by two or three coats of whitewash made *slightly* blue, to counteract the yellowness of the oil light. When it is not possible to disturb existing arrangements in this way, a portable screen must be procured. A linen screen may be used, but a great deal of light will be lost by transmission. I have tried a good many materials, and have finally settled down upon a paper screen. Mine I got made at a map mounter's. It consists of a continuous cartridge paper 60 inches wide, and is mounted on strong linen, backed with opaque black paper, and is therefore practically opaque. It is affixed to a roller, and when not in use can be packed away in a large fishing-rod case. Such a screen will be found to answer admirably for small-sized discs up to about 5 feet in diameter, and no light being lost by transmission will yield a very brilliant picture. An even more brilliant result may, however, be obtained by using a transparent screen of oiled paper or very thin tracing cloth. A very brilliant image may be obtained in this way, but as the screen has to be placed between the audience and the lantern a longer room becomes necessary, or else one must be content with a much smaller disc. A transparent paper screen can be easily made by fastening a piece of continuous cartridge paper (which may be obtained up to 4 ft. 6 in. in width) to a roller; it may be made transparent by rubbing olive oil or turpentine over its surface with a ball of cotton wool. This should be done about a couple of hours before it is required to be used, so as to allow plenty of time for the oil to permeate the pores of the paper. The drawback to this method lies in the fact

that the screen after once having been oiled soon attracts dirt and moreover requires to be re-oiled before being again used. If the tracing paper is employed it will require no further preparation, and will be found to answer the purpose well, the only drawback to its use being the small size of the screen, for the tracing cloth is sold in much narrower widths than the thin cartridge paper. If a seam is not objected to, two pieces may be joined with Le Page's glue, and a larger screen so obtained.

If brilliant results with an oil illuminant are desired, we must, of course, be content with a small sized disc. To expect to get a twelve foot picture as brilliantly lighted with oil as with a mixed jet would of course be absurd, and yet this is what a good many do attempt, and because they do not succeed, turn-round and abuse the oil lamp. If a dealer tells you that his oil lantern will throw a twelve foot picture equal to the limelight, do not believe him; the thing is at present an impossibility, and when such statements are made it will be found that a hand-painted slide and not a photograph was used as a test. But is there any necessity for such large-sized discs? In my opinion, none whatever; for home use a 4 ft. or at the most a 5 ft. disc will amply meet all requirements. If attention be paid to all the details to which I have referred, a very satisfactory result will be obtained, and if the slides are good, even an expert will find but little cause to grumble at the "show." I may just add that the room in which the exhibition is to take place should be thoroughly dark; a fire burning in the grate will detract greatly from the effect, as will the light from a street lamp shining through thin blinds. All these little matters must receive attention if the best results possible are to be obtained.

A word in conclusion on the character of the slides—particularly addressed to those who make their own. Some writers recommend that slides intended for exhibition by an oil light should be very thin. This, however, is quite a mistake, for a slide of good quality will show almost equally well by either gas or oil. What is wanted is good gradation and clear high lights. Undue density should of course be avoided. The use of hydrokinone for development has, in unpractised hands tended to lower the quality of slides generally, the tendency being to under-expose and over-develop; this fact should be borne in mind by the novice, a full exposure and a diluted developer being the chief remedies for the evil. In regard to colour, slides which have received a normal exposure and development, which treatment generally results in the production of a good engraving-black tone, will be found to show the best. The effect of delicate tones and shades is generally lost when the slides are projected by an oil light, which, though apparently brilliant, is very yellow when compared with that of a mixed jet. But my pen is running away with me, and I must bear in mind the Editor's strict injunctions to be practical and concise. The subject is a fascinating one, but I think I have said sufficient to show those who will follow the hints I have thrown out, how very good results may be obtained with an oil-lit lantern. Of the slides I may have more to say on a future occasion.

Gelatine Plates for Lantern-Slide Work.

By George T. Harris.

In spite of the facility of manipulation and excellence of result claimed for collodio-bromide by many of its adherents, it does not require that one should be an accomplished prophet to predict that eighty per cent. of the slides made and shown at metropolitan and provincial societies during the coming lantern season will be on gelatine plates. For while admitting that a lantern slide made on a collodio-bromide plate by an accomplished worker in this process is justly regarded among lanternists as the acme of perfection, yet when one comes to consider critically the slides occasionally shown at societies' meetings by average workers in collodio-bromide, and contrast them with the slides of the average worker in gelatine, it must, I think, be conceded that the advantage is with the latter. Again, there is a convenience and certainty about a gelatine plate that is rather absent from a collodio-bromide plate; the film is not so liable to abrasion in contact printing, nor anything like so prone to slide off the glass into the developing sink, as is the wicked wont of my collodion films when an especially fine slide is being developed. The development of a gelatine plate, also, is a process which the large number of lantern-slide makers are sufficiently familiar with to prevent a feeling of strangeness when undertaking it. And, to sum up in favour of gelatine for lantern work, it would, I think, require rather an astute person to distinguish on the screen between a first-class gelatine slide and one on collodio-bromide.

When it comes to the home preparation of the plates, a point with which this paper has more particularly to deal, the advantage in simplicity of process and certainty of result is, in my experience, unquestionably on the side of gelatine. I have prepared many batches of collodion emulsion, some of them of very good quality, but could never depend on always attaining the same standard of excellence, and I believe my experience is also that of other workers. In gelatine emulsion making this uncertainty has never presented itself to me provided an approved formula has been adhered to, and the necessary manipulations carefully carried out.

* ondon and Provincial Photographic Association.

The Preparation of the Plates.

The formula which has given me the most satisfactory result is, with slight modifications, due to Professor Burton, and was selected after trying several others, because of the good range of colour that could be obtained with it. It is—

1.

Nelson's No. 1 gelatine	80 gr.
Ammonium bromide	210 „
Sodium chloride	50 „
Hydrochloric acid	5 min.
Water (distilled)	8 oz.

2.

Silver nitrate	400 gr.
Water (distilled)	2 oz.

3.

Hard gelatine (Heinrich's)	400 gr.

Emulsification is performed with the No. 1 and No. 2 solutions, at a temperature of 130 deg. Fahr., and after the silver solution has been added very slowly to the bromised gelatine during its vigorous agitation, the jar is set on one side for a short time, when No. 3 is added, having previously been thoroughly well soaked in distilled water. As soon as the last added gelatine is perfectly dissolved in the emulsion, the jar may be immersed in cold water, to set the contents quickly. It is necessary for success in lantern emulsions to work with solutions as cool as possible, and avoid any tendency to cook. The emulsion, if properly made, should show ruby by transmitted light, and will be in an extremely fine state of division.

After the emulsion has set quite firmly, it has to be washed, and this is accomplished by squeezing it through a piece of moderately coarse "scrim," into distilled water. Some emulsion workers have rather questioned the necessity for using distilled water in washing emulsion, and it may not be so desirable in ordinary negative emulsion, but a careful comparison between slides made from emulsions washed in tap and distilled waters leaves me in no doubt as to the advisability of using distilled water in every instance.

Having left the squeezed emulsion to soak for a short time in the vessel of distilled water, it is squeezed again through the canvas into a fresh lot of distilled water, and again left to soak for a short time. Half a dozen squeezes, and as many soakings between are, I find, sufficient to completely remove the bye-products from the small batch of emulsion that the above quantities will make. I consider there is more efficacy in repeatedly squeezing an emulsion than in the long washing so often advocated, and by adopting the above mode of washing it is possible, in a long evening, to make an emulsion, wash and filter it, and coat the plates. It is not necessary to coat the plate thickly; indeed, rather the opposite is preferable.

Development and Variety of Tones.

With plates prepared in the manner just described, a good variety of tones is obtainable, from quite a warm chocolate to a perfect black, and the clearness of the plate, if carefully made, is perfect. The developer with which warm tones are readiest obtained is made up from ten per cent. solutions of sulpho-pyrogallol, ammonium bromide, ammonium carbonate, and ammonium hydrate respectively. As an example I may give—

Sulpho-pyrogallol	3 gr.
Ammonium bromide	3 „
„ carbonate	6 „
„ hydrate	3 minims
Distilled water	2 oz.

A great variety of tones may be got by varying the exposure and the quantities of the above ingredients.

The fixing bath is not an unimportant factor in procuring excellence in a lantern slide, for however clean the slide may be when it leaves the developer, if the fixing bath be even slightly discoloured the purity of the slide is sure to be depreciated. The formula I use myself is—

Chrome alum	1 part
Potassium meta-bisulphite	5 parts
Sodium thiosulphate	40 „
Water	160 „

This bath is an attractive green colour when made up, and retains its clearness until it commences to be saturated with silver, but it has always appeared to me unwise to continue using a fixing bath after it has commenced to show signs of saturation, and I strongly advise the use of two fixing baths in lantern-slide as in negative

work. An acid bath before the final washing removes any suspicion of stain.

INTENSIFICATION.

The intensification of lantern slides is a point deserving of more attention than I think it has hitherto received. With collodio-bromide it is a frequent practice to leave a fully exposed slide under-developed and gain the requisite density by silver intensification. Slides prepared in this manner are of the highest excellence. That gelatine slides have not been treated in the same manner is due, I feel sure, to the uncertainty of intensification. My first essays in this direction were with a modification of Mr. Wellington's sulphocyanide of silver intensifier, in which sulpho-hydroquinone and sodium carbonate replaced the pyrogallol and ammonium hydrate. The process of intensification was a very slow one, but the resulting slides were of high quality, perfectly clear in the high lights, and the original colour maintained unaltered. This intensifier was discarded, however, when it was found that an ordinary wet-plate formula gave equally good results in a more expeditious manner. The formula here given is one used for collodio-bromide plates and has answered perfectly in my hands for gelatine work:—

Silver nitrate...	2 parts
Citric acid	1 part
Nitric acid	1 „
Water (distilled)	16 parts

Two or three minims of this silver solution are added to a drachm of the ordinary ten per cent. solution of sulpho-pyrogallol, and the solution poured on and off the plate as in wet-plate redevelopment. When silver intensification fails with a gelatine plate it is usually because of insufficient washing, and one reason for the success I have met with in the silver intensification of gelatine slides is due, perhaps, to the extreme thinness of the film, which favours the more perfect elimination of the fixing salt. Full exposure, moderate development, and silver intensification is the procedure I would suggest in making lantern slides.

In conclusion, I would like to assure intending emulsionists that they will find the preparation of a batch of emulsion, sufficient for a gross or two of lantern plates, a much simpler matter than the text-books make it appear, and the additional interest it gives slide-making is ample remuneration for surmounting the initial difficulties of the process.

Substitutes for the Lime.

EVERY worker with the limelight has at some period of his lantern experience wished heartily for some efficient substitute for the lime, which has a happy knack of becoming useless, or else cracking or flying to bits, etc. We need not, of course, point out that the cause of the spoiling of limes when not very carefully preserved is the absorption of aqueous vapour and carbonic acid.

Pfaff tested the light emitted by lime and found that with the oxy-hydrogen it was equal to 153 candles; with ether and oxygen, 76; with spirit and oxygen, 69; with household gas and oxygen, 19 candles. Ordinary chalk, alumina, and magnesia gave much poorer light.

Drummond compared the light obtained by heating magnesia, etc., with oxygen and his alcohol flame, and found, with Rumford's photometer, that the limelight was 37, zirconium 31, and magnesia 16 times brighter than an Argand lamp.

Caron, of Paris, stated in 1868 that magnesia gave a better light than lime, but that the magnesia must be pure; a very slight impurity of silicates reduced the light to one-third.

Monckhoven recommended cylinders of magnesia, and gave a method of preparing the same ("Photo. Corresp.," 1869, p 214), but, unfortunately, they would not stand the great heat, splitting and cracking in all directions. A similar fate befell the magnesium balls recommended by Roux (Eder's "Jahrbuch," 1889, p. 300).

That numerous experiments should be made on this subject is but natural, and Plössl, of Vienna, have placed upon the market small rods of magnesia which are said to give very satisfactory results. These pencils are about 2¼ in. long, and although after some time they become pitted with a hole by the action of the light, at the price of ninepence they are cheap, as they may be used over and over again.

Caron and Tessié du Motay in 1869 recommended zirconia for the lantern, and Schmidt and Haensch, of Berlin, prepare little zirconium disks mounted in platinum, but these unfortunately are rather dear.

At a recent meeting of the Manchester Society a disc of magnesia was used, which, by means of a platinum pin and holder, was fixed to the ordinary lime pin. The light with the blow through was said to be equal to that of the lime, and the great advantage of the magnesia standing atmospheric influences better is not to be despised.

We had occasion last year to try experimentally the adaptation of the old Welsbach mantle to the lantern, and working from that we continued our experiments with the zirconium and other earths, the same being based upon the researches of Mr. McKean and reported by him in a paper read before the Chemical Society. And whilst it is comparatively easy to get a disc, cylinder, or pencil which will give an intense light in the oxy-hydrogen flame, it is by no means easy to manufacture such a substitute for the lime that will stand the heat long.

Undoubtedly we have here a field of experiment which will afford not only considerable occupation, but also considerable profit to the successful experimenter. We would suggest as a possible road to success the employment of zirconium, yttrium, didymium, etc., with a very powerful compressing machine, which might be made on the lines of those now used for making tabloids and compressed tablets of drugs.

Apparatus.

THE CADETT LANTERN PLATE.

MESSRS. CADETT AND NEALL, of Greville Works, Ashtead, Surrey, have sent us samples of their lantern plates, which in our hands have given excellent results, with images of great pluck and clearness, and yet without any blocking up of the shadows. With ferrous oxalate, eikonogen, and hydroquinone good warm blacks are obtained, and with the pyro developer recommended there is no rustiness but a rich velvet tone. The special formula is—

I.

Pyrogallic acid	40 gr.
Potass. metabisulphite	2 dram.
Ammonium bromide	40 gr.
Distilled water, to make	20 oz.

II.

Liq. ammonia, ·890	2½ dram.
Distilled water, to make	20 oz.

Equal parts of I. and II. to be mixed just before development.

THE MAWSON LANTERN PLATE.

This plate has long been a favourite, and from the samples we have tried in our experiments with amidol, etc., during the last week, they still retain all the high character and richness of tone for which they have been so long famous.

Lantern Notes.

A LANTERN show on an extensive scale in aid of the club funds is arranged by the Croydon Camera Club for the 4th November, at the Braithwaite Hall, the main attraction being the Robinson slides, known as "Picture-Making by Photography," supplemented by a selection of members' slides, and relieved by vocal and instrumental music. All interested in artistic photography, should seize the opportunity thus offered; the more so that the shilling entrance will help to strengthen the hands of those who are promoting the advancement of local photography.

NORTH MIDDLESEX.—On the 24th inst. the first members' lantern evening of the season was held. The President (Mr. J. W. Marchant) was in the chair, and about one hundred and twenty members and friends were present. Messrs. Ainsley, Beadle, Chang, Fox, Gregory, Jones, Marchant, Mummery, Plunkett, Smith, Taylor, Tittenor, Wall, and Wynne contributed slides, and Mr. R. F. Wynne manipulated the lantern. The slides were of the usual varied character, some of the sets being of great beauty, and as a whole showed a marked improvement over last years' work. In nearly all instances much attention had been given to securing atmospheric effects, and in the majority with considerable success; the glittering black and white slides with points of light spotted all over them of early days were conspicuous by their absence. The next meeting will be held on November 14th, when Mr. J. Traill Taylor will address the society on "Photographic Optics." Visitors will be welcome.

Trade Notes.

RILEY BROS., of 5, Cheapside, Bradford, favour us with no less than three lists, which are all well compiled and illustrated, This firm are noted for their cheap hiring scale. We note also that they offer a special oil lantern called the "Praestantia" which is constructed on the idea of creating great draught and thus gaining very brilliant illumination. Apparatus and slides both new and second-hand are offered at reasonable terms. These price lists are well worth looking through by any lanternist requiring anything.

Mr. Alfred Underhill, of 32, Clarendon Road, West Croydon, sends us a very complete list of slides, both plain and coloured, photographic and otherwise. Mr. Underhill has long been known for his artistic colouring, which he undertakes at from 1s. per slide.

Wormald and Co., of Sutton, Surrey, sends us a very neat little set of sample masks, which are mounted on cards with their special "photographic paste." This set of samples enables one to judge at once the best mask for any slide. Now that the fashion runs into narrow oblong pictures, Messrs. Wormald have introduced a new shape, $2\frac{7}{8}$ in. by $1\frac{1}{2}$ in., which is very convenient. The other new shapes are an oblong, $2\frac{7}{8}$ by $2\frac{1}{4}$, suitable for 10 by 8 reductions, and a large oval $2\frac{7}{8}$ by $2\frac{3}{4}$. Other lantern requisites are binding strips, white spots, and last, but not least, the Wormald lantern-slide printing-frame for contact printing from large negatives. We have had one of these frames in use for the last two lantern seasons, and found it of great convenience.

In our issue of October 7th we publish a letter from Mr. Davidson upon the developing of lantern plates with Amidol, with the addition of ferrocyanide. Messrs. Mawson and Swan have sent us some samples of slides developed with hydroquinone and also with Amidol with and without bromide and with and without ferrocyanide, and they show that ferrocyanide has no antifogging action in the Amidol developer, and that the slides sent us by Mr. Davidson are misleading, in that one-half is more developed than the other.

We ourselves have been able, since receiving Mr. Davison's slides, to make a series of experiments with Amidol, both for negative and positive work, and trying it with and without ferrocyanide we have been unable to detect any improvement by adding ferrocyanide, even when this amounts to ten or fifteen grains per ounce of developer. We shall continue our experiments and report in our next Lantern Supplement.

Archer and Sons, of 43 to 49, Lord Street, Liverpool, promise some novelties for our next number, and announce the introduction of a new Unilux lantern, or two lanterns with only one light; an "Ideal" lantern dissolver and carrier frame combined for single lanterns; the improved Ideal single lantern with bellows front; and last but not least, a new set of slides called "Slum Life in our Great Cities," which have been photographed direct from life in the slums by means of a hand-camera. With regard to these slides, Messrs. Archer say, "It need scarcely be montioned that this was a work of no small difficulty, and at times of danger also; for many of the inhabitants in these districts strongly object to have their portraits taken, or to be photographed or noticed in any way. The photographer was several times threatened, and at others taken for a detective officer (he believes that the reason he was not actually molested is due to the fact of his being a very big man). It needed skill, tact, and perseverance for four months to produce the set of views we are now about to show you. We think the time well spent, for the pictures give a true insight to the character and habits of the people who live in those districts, as well as the natural expressions on their faces, which can be obtained in no other way." This ought to be a capital set, and one which should prove very popular with photographic exhibitions of all kinds.

On November 7th a selection of slides the work of the members of the London and Provincial Photographic Association, and on November 9th slides by Captain Abney and Mr. B. Gay Wilkinson, will be shown at Pall Mall.

LANTERN FIXTURES.

Oct. 27.—LIVERPOOL.—AMATEUR PHOTOGRAPHER 1892 Prize Slides.
" 28.—WEST LONDON.—Presidential Address and Lantern Exhibition.
" 29.—LEYTONSTONE.—Members' Lantern Night.
" 31.—CROYDON.—Lantern Exhibition.
" 31.—S. MANCHESTER.—"History of a Lantern-Slide," J. W. Wade.
Nov. 1.—HACKNEY.—"Lantern-Slide Making," Mr. J. Carpenter.
" 3.—LEEDS.—Annual Lantern Exhibition in the Albert Hall.
" 4.—CROYDON.—"Picture-Making by Photography," Mr. C. W. Hastings.
" 4.—LEWISHAM.—"Lantern-Slides by Reduction," Mr. R. W. James.
" 4.—LEEDS (Y.M.C.A.)—Lantern Evening.
" 7.—SOUTH LONDON.—Members' Lantern Night.
" 7.—RICHMOND.—Lantern Evening.
" 8.—BIRMINGHAM.—Members' Lantern Night.
" 14.—NEWCASTLE.—Exhibition of Slides by Eminent Photographers.
" 18.—PRESTON.—AMATEUR PHOTOGRAPHER 1892 Prize Slides.
" 21.—RICHMOND.—"Different Lantern-Slide Processes," Mr. Andrew Pringle.
" 23.—COVENTRY.—Prize Slides.
" 24.—LOUTH.—AMATEUR PHOTOGRAPHER Prize Slides.
" 26.—HACKNEY.—Lantern Night.
" 29.—BIRMINGHAM.—"Lantern-Slide Making," Mr. E. Howard Jaques.
" 30.—Monthly Lantern Meeting.

SLIDE PAINTING COLOURS,

SPECIALLY PREPARED FOR PAINTING MAGIC LANTERN SLIDES.

IN COLLAPSIBLE TUBES AND GLASS POTS.

Boxes fitted with Varnish Colours, 5s., 15s., and 30s. each.
Boxes fitted with Water Colours, 2s., 5s. and 21s. each.



JUST PUBLISHED.

"A Manual on Painting on Glass, and How to Use the Magic Lantern."

1s. each.



ALSO MANUFACTURERS OF THE

NEW-CHROMO PRINTED MAGIC LANTERN SLIDES.

5s. per Set. 12 Slides. 80 Subjects.

New Lists Just Ready, Post Free.

J. BARNARD & SON, Manufacturing Artists' Colourmen,
RETAIL, WHOLESALE, AND EXPORT,
19, BERNERS STREET, LONDON, W.

DOLLOND & CO.,

35, LUDGATE HILL. Branch—62, OLD BROAD STREET,

MANUFACTURERS OF

Optical Lanterns and Slides.

SPECIAL COPYRIGHT SETS FROM ORIGINAL DRAWINGS.

SPECIAL SET FOR TECHNICAL EDUCATION,

The "BUSY BEE."

Forty-five Slides, complete, with Lecture.

DOLLOND'S "DURO" CLOTH LANTERN SLIDE BINDINGS

LAST LONGER AND LOOK NEATER THAN ANY OTHERS.
GROSS BOXES, 1s.

Exhibitions.

Society.	Entries close.	Opens.	Closes	Address of Secretary.
P.S.G.B.	—	Sept. 26	Nov. 10	The Assist. Sec., 5a, Pall Mall East
Todmorden Scientific Assoc.	—	Nov. 5	—	Jno. T. Binns, 3, Garden Terrace, Todmorden
Hackney Photo. Soc. ...	Oct. 29	Nov. 15	Nov. 17	W. Fenton Jones, King Edward Road, Hackney
Leytonstone Camera Club...	Oct. 25	Nov. 10	Nov. 12	A. E. Bailey, Rose Bank, South West Road, Leytonstone
Brixton	—	Nov. 17	Nov. 19	F. W. Levett, 74, Geneva Road, Brixton.
Stanley Show...	—	Nov. 18	Nov. 26	H. Smith, 29, Finsbur Pavement, E.C.
South London	—	Nov. 24	Nov. 26	Chas. H. Oakden, 51, Melbourne Grove, E. Dulwich
Exeter Amateur Photo. Soc.	—	Nov. 24	Nov. 26	Rev. J. W Sparshatt, Fairfield House, Alphington Road, Exeter
Tunbridge Wells	Nov. 14	Nov. 23	Nov. 24	J. Chamberlain, 14, Calverley Park Gardens, Tunbridge Wells.

THE EAST LONDON PHOT. SOCIETY.

THE East London Society have been fortunate enough in getting together a really good show for so young a society. The judges (Messrs. A. Horsley Hinton and E. J. Wall) made the following awards in the various classes. Class A, Landscape and river scenery: 1st prize, by C. Tylee; 2nd, E. Stone; 3rd, C. Tylee. Class B, Seascapes: 1st, F. Uffindell 2nd, C. N. Mead; 3rd, W. R. Gould. Class C, Groups and portraits: 1st, C. Tylee; 2nd, M. A. Wilkinson; 3rd, G. S. Pasco. Class D, Instantaneous, 1st and third, C. Tylee; 2nd, M. A. Wilkinson. Class E, Architecture: 1st, C. Tylee; 2nd, M. A. Wilkinson; 3rd, E. Stone. Class F, Enlargements: 1st and 3rd, C. N. Mead; 2nd, M. A. Wilkinson. Class G, Novices: 1st, A. G. Cooke; 2nd and 3rd, Mr. Greenwood. Class H, Open, 1st, C. Tylee; 2nd, G. E. Bennett; 3rd, J. E. Austin. Class I, Outing pictures: 1st, M. A. Wilkinson; 2nd, F. Uffindell; 3rd, C. N. Mead. The silver medal and challenge cup, presented by Mr. C. J. Oliver, for the best picture in the exhibition, was awarded to a very fine study called "Ploughing," by C. Tylee.

Taking the work on the whole it shows first-class merit, and here and there one comes across a real little triumph. Besides the competition pictures a large number lent by the Editor of the AMATEUR PHOTOGRAPHER were on view, and Mr. Horsley Hinton had also lent some of his masterpieces.

A small but select show of apparatus was exhibited. Messrs. Platt and Witte have, of course, a fine collection of brass and aluminium fittings of all kinds, several lanterns, both single and biunial, in metal and wood, and we noted a very neat contrivance for centering the lanterns on one of the biunials. This firm also showed a cheap German toy lantern, which sells for 12s., a real marvel at the price.

The City Sale and Exchange Rooms, of Lime Street, E.C., have a very varied show of all the leading makes of cameras in the market, both stand and hand, with also a lot of lenses.

R. and J. Beck, of Cornhill, show the Bynoe printing frame and their Frena hand-camera. Perken, Son, and Rayment, of Hatton Garden, show some excellent prints from negatives taken with their lenses.

Mr. T. H. Powell, of 116, Denmark Hill, S.E., fills a central table with his specialities in compressed developers and toning baths. The novelties shown by Mr. Powell are silhouette masks with full instructions for taking profile likenesses, a new photographic measure of neat and practical design; and a new Christmas card with mount for photograph will be of great attraction this season. Some good prints on Hardcastle's platinum printout paper, for which Mr. Powell is agent, speak well for the capabilities of it.

Ramsgate.—On 3rd inst. the opening meeting of the winter session was held. Although the proceedings were entirely of a business nature, the members turned up in goodly numbers, and it was determined to have four excursions during the session, and a lantern competition in 1893. The plan of forming an excursion party to visit the Pall Mall Exhibition was mooted.

Societies' Notes.

OXFORD UNIVERSITY PHOTOGRAPHIC CLUB.—The officers for this term are A. McMullen (Balliol), President; J. Walker, M.A. (Christ Church); A. Eglington (Lincoln), Hon. Secretary. The next meeting will be held on October 31st, when C. J. Mead-Allen will give a lantern exhibition of the Isle of Wight.

WE hear that the application for entry forms for the Hackney Society's show has been "tremendous," and from well-known men too. The last day for sending in entries is the 29th inst., and the energetic Hon. Secretary asks us "to tell the dilettanti"—we suppose he means the dilatory ones—to hurry up, or else they will be where the little boat was, that is a long way behind. Messrs. Marion, Wray, Watson, Paget, Park, Platinotype, Platte, etc., are to send apparatus.

THE Tunbridge Wells Am. Phot Assoc. will hold their sixth annual exhibition on November 23rd o 25th. The following are the classes:—

Classes for Members Only.—1, Architecture, exterior or interior; 2, Interiors, other than architectural; 3, Landscape and seascape; 4, Genre; 5, Lantern slides, best series of six, any subject; 6, Transparencies and stereoscopic; 7, Scientific, or any subject not included in the above; 8, Four prints from negatives taken with a hand-camera; 9, Four lantern slides.

Open to Members of any Photographic Society in Kent and Sussex.—Best Set of Four Prints: 10, Figure studies; 11, Landscape, seascape, and architecture.

Open Classes.—Amateurs: 12, Landscape or seascape; 13, Genre; 14, Lantern slides, best series of six; 15, Architecture, exterior or interior. Professional: 16, Landscape or seascape; 17, Genre; 18, Lantern slides, best series of six; 19, Portraits; 20, Enlargements.

One silver medal will be given for the best exhibit of apparatus Silver and bronze medals will be given in each class. Entry forms and full particulars from the Hon. Secretary, Mr. Jos. Chamberlain, 14, Calverley Park Gardens, Tunbridge Wells.

THE annual report of the Blackheath Camera Club shows a very satisfactory state of affairs. A substantial balance to the good, a good programme got through and numerous excursions, besides which £4 has been handed over to the National Lifeboat Institution. Well done, Blackheath! This last item might well be copied by other societies.

THE Sunderland Y.M.C.A. Camera Club will hold a social evening on November 1st, when there will be some prints, stereoscopes, etc., on view, a short concert, then the limelight, more singing, and then more lantern. Evidently the powers that be think there is nothing like variety, an opinion we hold also.

MONDAY, October 31st, is the last day for receiving exhibits (which must be accompanied by entry forms if not previously sent) for the exhibition of the Leytonstone Camera Club at the Masonic Hall, Leytonstone, on the 10th, 11th, and 12th of November. Lady Brooke will open the exhibition at six o'clock on Tuesday, the 10th inst. Messrs. Elliott and Son's prize medal wave study from the Convention will be on show, also several other carbon enlargements by the same firm. Photo-mechanical printing will be shown in all its branches, as will also be a large collection of apparatus and photographic appliances, a number of microscopes, polariscopes, etc., will be shown by members of the Club and explained to visitors. The programme will consist of a fresh feature in entertainment every half hour in each evening. Official catalogues, when ready, will be sent post free on receipt of four stamps.

THE visitors to the P.S.G.B. show for the week ending Oct. 22nd numbered 1,471. The total since opening, 6,277.

A correspondent kindly sends us notice that English plates and papers may be obtained from Herr Sigmund Federlein, Hanover.

A curiosity has been sent us by M. Rogers, of Church Street, Great Missenden, Bucks, and is a photographic reproduction of a postcard on which the word "Prizes" is written 10,858 times.

The *Photographer's Record*, published by Elliott and Son, has this month a quarter-plate illustration by the carbon process of "Welsh Ponies at Barnet Fair"—a snap-shot, taken by Mr. Birt Acres on a Barnet plate with Houghton's Shuttle hand-camera, which speaks well for the camera, plate, and printing process.

Societies' Meetings.

Barrow.—This section opened their winter session by a public meeting on the 13th inst. The meeting was well attended, and was presided over by Mr. A. Blechynden, the chairman of the section. Eighty lantern-slides, showing various parts of the Holy Land (by Wilson, of Aberdeen) were shown on the screen by Mr. J. Timms with his triple lantern. Mr. J. Gaudie read the connective readings in an able manner. The slides were of a high-class quality, and were made from genuine photographs, and were valuable in giving a true idea of the country, showing also the inhabitants, street scenes, interiors, and scenes familiar to lovers of the Holy Scriptures, and would probably alter the impression which many have conceived of this interesting country, which is very often associated with fertile plains and palm trees, etc. Many of the slides showed scenery of a wild, barren, rocky nature, with very little vegetation,

Blackheath.—The first annual general meeting was held on 4th inst., the chair being taken by Dr. Ernest Clarke, M.D., B.S. The officers for the session of 1892-93 were elected, as follows :—President, Mr. W. H. M. Christie, M.A., F.R.S., F.R.A.S. (Astronomer-Royal) ; Vice-Presidents, Dr. Ernest Clarke, M.D., B.S., and Mr. J. T. Field, L. Mus. T.C.L. ; Council, Revs. W. P. McDonald, M.A., and W. K. Soames, M.A., F.R.A.S., Messrs. Edmund Dashwood, M.R.C.S., W. Claude Johnson, M. Inst. C.E., F.R.A.S., Samuel E. Phillips, George Vesper, and E. J. C. Wiseman ; Hon. Curator, Mr. W. Farrington ; Hon. Treasurer, Mr. A. W. Young ; Hon. Secretaries, Messrs. T. B. Earle, The Cottage, Handen Road, Lee, S.E., and C. W. Piper, 46, Shooters' Hill Road, Blackheath, S.E. The report for the last session, which was unanimously adopted, shows a good record of work done in the way of lectures, demonstrations, and summer excursions, while the balance-sheet shows that the club is in a very satisfactory financial condition, considering that it is only just entering the second year of its existence. The Council hope to be able in a short time to provide a dark-room for the use of members, to many of whom it will doubtless be of great service. The first ordinary meeting of the present session was held, the Rev. J. H. S. Taylor, B.A., being in the chair. Dr. Ernest Clarke (Vice-President) gave a very interesting lecture on "The Eye as a Camera," illustrated by lantern slides, specially prepared for the occasion, and also by models. The lecturer described in detail the complicated structure of the human eye, pointing out the manner in which the various parts are reproduced in the camera. He explained that the lens of the eye can be separated into three distinct lenses, two divergent menisci, with a double convex between, thus bearing a striking analogy to a photographic lens. The iris corresponds to the diaphragm and stops, but automatically adjusts itself, the aperture becoming smaller as the light increases, and larger as the light diminishes. It is in front of the lens, and both are protected by the cornea, which is simply a transparent cover, to prevent dust, etc., from interfering with the delicate mechanism of the iris and lens. The retina corresponds to the sensitive plate, and consists of the interior coating of the back of the eye, which, under the micr oscope is seen to be of a very complicated structure. From this sensitive surface the sensations of light and colour are carried by the optic nerve to the brain. The retina differs from the sensitive plate in having a curved surface, which at all parts is equidistant from the lens, whereas the photographic plate has of necessity a plane surface, the centre being nearer the lens than any other portion, and the edges being at a greater distance. This is the cause of what is knowu as curvature of the field, a defect which, of course, does not exist in the eye. The most remarkable difference between the eye and the camera is in the manner of focussing. This in the camera is accomplished by moving the lens, either further from, or nearer to the plate, but in the eye the lens itself is altered by a series of muscles, arranged so as to act upon it from all sides, which make it more or less convex as required. In the normal eye focussing is only necessary for objects within a difference of about 20 feet. For anything beyond that distance the eye is practically a fixed-focus camera. The whole interior of the eye is filled with a semi-fluid transparent matter, and the retina is impregnated with a black pigment to prevent the reflection of light within the eye ; the interior of a camera is, of course, blacked for the same reason. After various questions, put by the members, had been answered by the lecturer, a hearty vote of thanks was unanimously passed to Dr. Clarke for his most interesting lecture, and the meeting terminated with another vote of thanks to the chairman for presiding.

Bournemouth.—The inaugural meeting of the winter session was held on the 19th inst. The President (Rev. J. R. Husband, M.A.) took the chair. A short address was delivered by the President, who referred to the work accomplished during the summer, also urging the members to renewed exertions in the direction of artistic photography as well as to excel in the working of the various processes. The President also gave some very interesting notes on the "New Cold Bath Platinotype Printing Paper," during the reading of which the chair was occupied by Dr. H. Nankwell, one of the Vice-Presidents. Two prints were developed and fixed by the new process, and the simplicity with which the paper was worked recommended itself to all present. An album of interesting views on this paper was shown, and the President also announced his intention to give a prize to be competed for by the members of the society who were beginners. Some excellent notes on "Ilford P.O.P." were also given by Mr. P. H. Price, the various results to be obtained by different toning baths, also the difficulties that could be overcome in numerous ways during the operations of printing, toning, etc., were well illustrated by some nicely finished views, which were handed round for inspection. Several members present brought numerous specimens of their summer work, which were passed round for criticism.

Brechin.—The usual monthly meeting was held on the 19th inst., Mr. H. Braid, Vice-President, in the chair. The secretary, as delegate to the Photographic Convention, gave a short report of the proceedings and exhibits, and exhibited the Developan and Beck's new metal printing-frame. The Developan having only come to hand that morning, it had not been possible to get a plate developed to show how it would work. Mr. J. D. Ross thereafter read a short paper on "Enlarging," and finished up with a demonstration on Eastman's bromide paper. The subjects were a statue of Hamlet and a view of Brechin Cathedral Both turned out very successful, and, on the motion of the chairman, Mr. Ross was thanked for his paper and demonstration.

Brixton and Clapham.—An ordinary meeting was held on the 18th inst., Mr. James W. Coade, Vice-President, in the chair. The Chairman first referred to the Club Exhibition to be held on the 17th, 18th, and 19th of next month, and begged the members to put their shoulders to the wheel and to make the exhibition a great success; he also reminded them that the last day for receiving exhibits was the 8th prox He then called attention to the Exeter Society and the Stanley Show Exhibitions, and stated that the secretary would supply entry forms on application. Subsequently, Mr. F. W. Kent made some interesting remarks on "Bromide Paper and Lantern Slides." By printing and developing several pictures, he showed how different results in colour, etc., could be obtained by varying the length of exposure, the distance from the light, and the developer. The paper used was Ilford slow, and the developer ferrous oxalate. He also made some lantern slides from half-plate negatives in a reducing camera of his own construction. Some discussion followed, in which Messrs. Butler, Haward, Willoughby, and others took part.

Crewe.—The first of a series of limelight lantern demonstrations was given on the 19th inst. The subject was "A Visit to the Alps and Fjords," by the Rev. W. G. Rainsford, D.D., President of the society, Mr. T. Gorrell presiding. There was a good attendance. The views exhibited on the screen were photographed by the rev. gentleman himself, and were very fine specimens. The lecture was most interesting, humorous, and entertaining. The succeeding nights will include members' own slides, competition slides, Channel Islands, and the AMATEUR PHOTOGRAPHER Prize Slides.

Croydon.—The first of the winter meetings for the reading of papers was held on Monday, the President, Mr. H. Maclean, F.G.S., in the chair. Having presented Mr. H. E. Holland with a copy of Woodbury's Encyclopædia, being prize for Summer Excursion Competition, the President proceeded to give his promised "impressions" of the Pall Mall Exhibition, in the course of which he emphasised the value of *viva voce* criticism in comparison with the written article, particularly in the case of a society such as the Croydon one, for while, on the one hand, the critic's remarks were likely to be more genuine and outspoken, on the other, any errors are generally checked and corrected by some one or other of his hearers. A series of reproductions, kindly lent by Mr. C. W. Hastings, served to illustrate several of the points touched upon. An interesting discussion ensued. Subsequently, Mr. A. E. Isaac delivered a series of notes founded upon personal experiments on the subjects of "Reduction and Intensification." He explained how, paradoxically, a reducer (say Farmer's) can be used to intensify, and conversely an intensifier used to reduce contrast, always, be it understood, with negatives of a suitable character. Besides which, the value of a combination of reduction and intensification was insisted on. In a well-sustained discussion, Messrs. Sargeant and Packham urged the benefit of altering the printing values of otherwise satisfactory negatives by the modifying power available by turning the negative into a positive (transparency plate being used) and then making another negative from the latter. Several fine enlargements by Messrs. Hirst and Packham were shown, also an album of hand-camera work done in the Highlands by Mr. S. C. Brookes.

Glasgow and West of Scotland.—On the 17th inst. the first monthly meeting of the session was held. There was a large turn-out of members, and the ensuing session promises to be a great success. Mr. Thomas Taylor, President, after his opening remarks on the novelties lately introduced into photography, gave a demon-

TRADE **THIOTONE** MARK.

"AS GOOD AS GOLD."

PATENT APPLIED FOR.

THE new Photographic Toning Solution for producing rich, warm tones on Gelatino-chloride printing-out papers.

THE ADVANTAGES OF USING THIOTONE OVER THE TONING AGENTS USUALLY EMPLOYED ARE:

1st.—Its CHEAPNESS—the cost being about one-tenth of toning with gold.
2nd.—The great PERMANENCY of the print.
3rd.—The RAPIDITY with which the operation is carried out.
4th.—SIMPLICITY of the process, it being only necessary to add a very small quantity of THIOTONE to a very large quantity of water to form the toning bath.

For full directions for use see wrapper on bottle.

Price per 6-oz. bottle, 2s. 6d., or 2s. 9d. post free on receipt of remittance.

TRADE **NOXINOL** MARK.

PATENT APPLIED FOR.

BY the addition of a small quantity of a solution of this product to the developing solution usually employed, "fogging" caused by developing in non-actinic-light-tight "dark" rooms, tents, etc., is prevented. When instantaneous or other rapid plates are under development, NOXINOL is especially valuable.

For full directions for use see wrapper on bottle.

Price 2s. 6d. per bottle, or 2s. 9d. post free.

G. WRIGHT & CO., 97, Manchester Road, Hopwood, Lancashire

Wratten & Wainwright's
CELEBRATED
"LONDON" PLATES,

"ORDINARY" (15°). For Landscapes, Copying, and Transparencies.
"INSTANTANEOUS" (19°). For Studio and General Work.
"DROP-SHUTTER SPECIAL (24°). For Dull Weather and Hand Cameras. The most rapid Plate made.

Have been manufactured continuously for fifteen years, and have never yet been approached in quality. They are recognised by the most competent authorities as the standard by which all other Plates are judged. These Plates are indispensable for the production of Exhibition Pictures. More High Class Medals have been secured by results on the "London" Plates than all others combined.

Wratten & Wainwright's
SENSITIZED PAPER

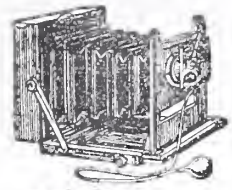
HAS THE LARGEST SALE AND HIGHEST REPUTATION, KEEPS WELL, TONES EASILY, AND **DOES NOT BLISTER.**

Post Free—per Quire, 13/6; Half-quire, 7/-; Quarter-quire, 4/-; 3 Sheets, 2/3; Sample Sheet 10d.
Cut Sizes, 1/- per Quire extra.

APPARATUS, CHEMICALS, ETC., OF THE BEST QUALITY ONLY, AT LOWEST MARKET PRICES.
Catalogues and Estimates Free.

WRATTEN & WAINWRIGHT, 38, Great Queen Street, Long Acre, London, W.C.
TELEPHONE No. 2776. TELEGRAPHIC ADDRESS: "WRATTEN, LONDON."

JOHN PIGGOTT.



"MY CAMERA."

Size 4½ by 3½, including Rapid Rectilinear Lens, folding Tripod Stand, and fitted with Pneumatic Shutter, and one Double Dark Slide. Price complete, £2 15 0

Size 6½ by 4½. Do. do.	£4	10 0
,, 8½ ,, 6½. Do. do.	£6	15 0
Double Dark Slides, extra, 4½ by 3½	0	7 6
,, ,, ,, 6½ ,, 4½	0	11 6
,, ,, ,, 8½ ,, 6½	0	17 6
Camera and one Double Back only, 4½ by 3½	1	12 0
,, ,, ,, 6½ ,, 4½	2	12 0
,, ,, ,, 8½ ,, 6½	3	15 0

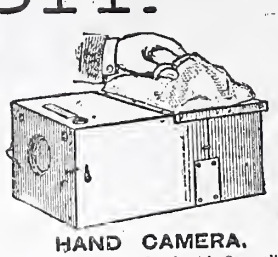


¼ plate R. R. Detective Lens, 3/3

Rebounding Shutters, ¼ pl. 1/-, ½ 2/- Postage 3d



Postage 3d



HAND CAMERA.
For 12 ¼-plates, fitted with Samuel's Changing Bag, 21/

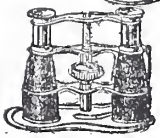


MAHOGANY DROP SHUTTERS
For Lenses up to 1⅛ in. diameter, with Pneumatic attachment, 3/-



CAMERA CASES.

	¼-plate	½-plate	Whole plate
Solid Leather	11/6	12/6	19/9
Canvas Collapsing with sling	2/6	3/3	4/9
Postage	3d.	3d.	4½d.



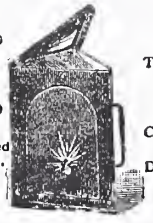
THE WAISTCOAT-POCKET OPERA.
Height 2½ in., weight 5 oz.
This is a powerful Opera and Marine Glass, with a long range and good definition, and is fitted with a compass at one end, diameter of object lens 1 in., price 15/6.

Steel Frame Spectacles— per pair.

Convex only	7d.
Better Quality (concave or convex)	1/4
Light Frames	1/10
Pebbles	2/6 and 4/3
Best Finished Frame and Best Pebbles	6/6
Nickelled Curl Side, invisible frames	3/-
Cup or Deyes, any tint	3/10
Tinted, smoke or blue (flat glasses)	2/3

3d. extra for box and postage must be remitted with all orders for Spectacles and Folders.

GOLD FRAME SPECTACLES.
10 carat, glazed with best glasses, per pair 15/6



THE FOLDING TRAVELLER'S LAMP

The most portable Lamp ever made
Price 3/- each.
Extra Lights for ditto, 2d. each. Postage 4½d.
Cheap Cardboard Lamps—
(Folding) 6d. each, Postage 3d.
Do. with tin top and bottom—
1/6 each, postage 4½d.



(Please send for "My Camera, and How to use it," by JOHN PIGGOTT. List of Photographic Accessories, FREE.

117, CHEAPSIDE & MILK STREET, LONDON.

IF YOU WANT RESULTS OF THE HIGHEST ARTISTIC EXCELLENCE,

USE **DURAN'S BACKGROUNDS.** THEY ARE ACKNOWLEDGED TO BE THE FINEST ON THE MARKET TO-DAY.

For a high-class effect in Bust Pictures, try one of Duran's Rembrandt Cloud Grounds. On Canvas, 48 by 40, 7s. 6d., in Flatted Oil, on Frame Complete.

FRANCESCO DURAN, Medallist, Paris and Vienna Studios, 21, Terrace Road, HANDSWORTH, BIRMINGHAM.

PLEASE MENTION THIS PAPER.

LIESEGANG'S PAPIER ARISTOTYPE PAPER
Registered Trade Mark
ED. LIESEGANG.
DÜSSELDORF.

The "Amateur Photographer"

HAS BY FAR THE

LARGEST AND MOST INFLUENTIAL SALE

Of any Photographic Journal,

AND IS THEREFORE THE

CHEAPEST AND BEST MEDIUM FOR ADVERTISEMENTS.

STANLEY SHOW.

SIXTEENTH ANNUAL EXHIBITION

of CYCLES, ACCESSORIES, and

PHOTOGRAPHIC APPARATUS,

ETC.,

ROYAL AGRICULTURAL HALL,

ISLINGTON, N.,

NOVEMBER 18th to 26th Inclusive.

Entries Close November 5th.

Plans and Particulars on application.

Stanley Photographic Competition.

Fifteen Medals.—Five Gold.

Five Open Classes—

(A) Instantaneous—Cycling.
(B) Instantaneous—General.
(C) Landscapes.
(D) Lantern Slides.
(E) Platinotype Printing.

ENTRY FORMS AND PARTICULARS ON APPLICATION

HERBERT SMITH,
29, FINSBURY PAVEMENT, E.C.

stration on an enlargement camera, one of the largest made, and had a picture ready "while you wait." There was a large collection of beautifully-executed lantern slides shown on the screen. This brought the meeting to a close.

Greenwich.—A meeting was held on Wednesday, October 19th, at the Lecture Hall, Greenwich, at which Mr. E. W. Mannder, F.R.A.S., presided, "to consider the advisability of forming a Photographic Society for Greenwich." After introductory remarks by the Chairman, Mr. Haddon gave a short account of method of procedure in such societies as he was acquainted with. The Chairman, resuming, pointed out that the project was warmly supported by the officials of the Royal Observatory and Royal Naval College, and by several local amatenrs. A series of propositions having been put and carried unanimously, the meeting resulted in the formation of the Greenwich Photographic Society. The Executive will consist of the following gentlemen:—President, Rev. Brooke Lambert, M.A., B.C.L. Vice-Presidents, Messrs. H. Haddon and H. H. Turner, M.A. Committee, Messrs. Maunder, F.R.A.S.; Arthur Martin; T. Lewis, F.R.A.S.; Dr. Waghorn; J. Q. Braidwood; J. H. Kingdon; G. S. Criswick, F.R.A.S.; R. Lewis, and W. Ellis, F.R.A.S. Hon. Treasurer, Mr. Charles C. Churchill, 5, Annandale Road, Greenwich. Hon. Secretary, Mr. Leon J. Atkinson, 193, Greenwich Road, S.E. Applications for membership may be made to Secretary or Treasurer. Subscriptions 5s., payable to Treasurer. The first meeting of the new Society will take place at the earliest possible date. Upwards of forty ladies and gentlemen have already signified their intention to join the Society.

Hackney.—On the 18th inst., Mr. W. P. Dando in the chair, Messrs. Cross, Green, and Dr. Vere-Nichol were nominated for membership. Work was shown by Messrs. Gosling, Puttick, and Beckett (portraits of the exhibition committee), and J. Beckett, Funston. Mr. S. H. Barton then gave a short paper and illustrations on "Portraiture without a Studio." He had been fairly successful outdoors in taking portraits, and his method was to take them between two walls. He said it was advisable to not have too much top light; portraits should be soft, and a formula he recommended to obtain softness was an eikonogen one given by Mr. Chapman Jones. The Society's blackboard was then requisitioned, and the Hon. Sec. proceeded to draw a design he had made for taking portraits in the open. It consisted of four uprights—after the fashion of an ordinary clothes horse—and the lighting was subdued as required at top and sides by various kinds of calicos, etc. Mr. Gosling had used a roll of Lancaster's window blind as a background and shield from the top light. The Chairman had found the ordinary brown paper used for putting under carpets of service. The Hon. Sec. said he had obtained good results with this. Mr. Beckett, in answer to various questions put to him, said he would have a fair amount of top light and a high shield at the back and side. As far as retouching was concerned, he advised it in a general way, but the likeness ought never to be sacrificed to the retouching. Mr. Gosling asked how to rednce a small dense part of a negative. The Chairman said he would use methylated spirit 1 part, water 2 parts, gently rubbing in solution with cotton wool. Mr. Beckett said he would use a knife, but with great care. The Hon. Sec. announced that the next meeting (Tuesday) would be a flashlight evening.

Holborn (Camera Club).—On 21st inst., Mr. J. H. Avery in the chair, Mr. Ernest gave an interesting demonstration on "Simple Chemical Analysis for Photographers," the knowledge of which, he thought, was a powerful weapon with which to fight the many difficulties in which the path of photography ran. He gave various experiments, including testing with iodide of starch for hypo, and many other tests. On Saturday last the Camera Club entertained the members of the Holborn Cycling Club. The evening commenced with a few songs, and wound up with a lantern show. A large number of lantern-slides, made from negatives taken at the Southern Counties Cyclists' Camp, held at Dorking in August this year, were thrown on the screen to a large number of members of both Clubs.

Kendal.—A meeting was held on the 20th inst., Mr. Frank Wilson being in the chair. The prints of the recent competition were exhibited, and the awards announced. These had been kindly made by Mr. Paul Lange, of Liverpool, who expressed the opinion that for such a small society, the Kendal one showed very fair and generally very good average work. In Class I., landscapes, Mr. F. P. Heath ranked first, Mr. J. Severs second, and Mr. J. H. Rhodes third. In Class II., marine or lake subjects, Mr. R. O. Pennington stood first, and Mr. J. H. Rhodes second. In Class III., figure studies, Mr. R. O. Pennington was first, and Mr. J. Severs second. In Class IV., animals, Mr. F. P. Heath was first, Mr. R. O. Pennington second, and Mr. J. Severs third. In Class VI., architecture, Mr. J. H. Rhodes was first. In the class for living objects in motion, Mr. Severs was first. An interesting paper was read by Mr. J. H. Rhodes on "Isochromatic Photography," illustrated by specimens of his own work, and gave rise to considerable discussion on the merits and otherwise of isochromatic plates. Mr. Rhodes sketched briefly the growth of photography from the collodion to the gelatine dry-plate, as introduced by Dr. Maddox, and thence to the Isochromatic plate by Tailfer, and gave credit to the Ilford Company for removing one great objection to its use, viz., cost. Professor Crooks had many years ago pointed out the defect caused by the unequal action of the yellow and the blue rays on the same plate, and suggested the use of a yellow screen as a remedy. This was not found all that was required, and Colonel Waterhouse and Dr. Vogel were the first to experiment on the plate itself. They used collodion, and it was found that their experiments were quite ineffectual with gelatine plates. Professor Tailfer then took the matter up, and his process was brought out after considerable trouble. The lecturer's experience was, after exposing several dozens, that with ordinary care he never had a case of fog or halation with isochromatic, but no ammonia in any form should be used in the development of them. Prints and negatives were exhibited, showing the manner in which the true values of the varying shades in landscape had been rendered by these plates, as also the very beautiful detail in mountain scenery, and the fine cloud effects, which he had never had on ordinary plates. An animated discussion on the merits and otherwise of Isochromatic plates closed this interesting meeting.

Leytonstone.—On the 22nd inst. Mr. A. P. Wire gave a "lecturette" on "Stereoscopic Photography with a Single Camera." Dr. W. P. Turner, President, occupied the chair, and the meeting was well attended. Mr. Wire, in opening the subject, first of all explained, very lucidly, the principles involved in the construction of the stereoscope, its lenses and pictures. A stereoscope was exhibited that was made by the lecturer, and made in such a way that the lenses could be taken out for examination. In explaining on what principles the pictures were made, Mr. Wire showed some line drawings made by hand in which the stereoscopic principle was adopted, and which in the stereoscope showed the well-known solidity. Next were shown some photographs of still-life, shells and vases of flowers, which had been made by the lecturer. The camera was fixed, and the object to be taken placed on a small turntable. Taking one view, and then moving the object and table slightly round, a second view was taken. In this way, by using ordinary quarter-plates, the two necessary views were taken, and capital steroscopic photographs made. Mr. Wire having shown that his plan was only adapted to still life, Dr. Turner "took up the parable," showed a handsome little stereo camera for outdoor work, with single lens and baseboard so arranged that the two pictures can be taken on a stereoscopic plate by moving the camera along the case. A discussion followed, in which Messrs. Watson Brown, M.A., F. Wates, W. G. Roberts, and others took part. The names of Mr. D. J. Morgan, J.P., and Dr. Warwick were put to the meeting for election and accepted, making up the muster roll to 110.

Lewisham.—On 21st inst., Mr. B. Davidson in the chair, the lecture by Mr. C. W. Hastings on "Picture-making by Photography," with lantern illustrations from Mr. H. P. Robinson's celebrated pictures, as was expected, proved to be one of the most successful meetings the club has had. After giving a short history of Mr. Robinson and his works, Mr. Hastings said he was the first that had been privileged to take copies for the lantern from his pictures, the result being that one has now the opportunity of seeing the most notable of them in one evening. Among others might be mentioned "Fading Away," "Holiday in the Woods," "Somebody Coming," "The Day's Labour Done," "Gossips," "A Merry Tale," "Under a Hay-cock Fast Asleep," "Dawn and Sunset," "Hark, the Lark," "Carolling," etc. As each picture was thrown on the screen, attention was drawn to the method of composition, in some instances saying what suggested the picture, and the means by which it was accomplished. The lantern was of Mr. James' own construction, having a bellows front with rack and pinion, so that he was enabled to use an Optimus Euryscope lens of 8½ in. focus. He was using a benzoline saturator, and the carrier was one just patented, which automatically raised the slide when a fresh one was pushed in.

Liverpool (Camera Club).—The members began their winter session on 12th inst. with a smoking concert, in their rooms, 128A, Mount Pleasant. The President gave a hearty welcome to the friends in a few words, and then introduced Mr. A. C. Yule as the Chairman for the evening. The printed programmes were illustrated with comic sketches of the summer outings, and some of the accessories of an amateur's outfit. The evening's enjoyment was contributed to by singing and instrumental items. Incidents of the past session were graphically described, and a few topical hits made by the Secretary in his "Lay of the Liverpool Camera Club." The second annual fancy dress ball in connection with this Club will be held on the 12th December in the City Hall.

London and Provincial.—On the 13th inst., Mr. W. E. Debenham in the chair, in answer to a question, Mr. Leon Warnerke described his method of breaking emulsion in bulk and used a silver cylinder with a mesh of silver wire about five to the inch with a plunger working in an india-rubber collar. Mr. Ripley was elected a member, Mr. Richard, introduced by Mr. Warnerke, showed the Photo-

Jumelle, an opera-glass camera with special enlarging apparatus for the negatives. Some very good results were shown. Mr. Levy's new Flying carrier was also exhibited, and Percy Lund's new album was exhibited by Mr. Snowden Ward. Mr. Redmond Barrett then showed examples of retouching, and in the course of his remarks said that the great fault was over-working. Cross-hatching was not always admissible, and in fact should be avoided as a rule. The main idea should be to get what was wanted, and he held that as a rule the more lead the less likeness. In answer to numerous questions, Mr. Barrett said the H.B. was a safe pencil, and he always used the Autotype medium, which should be applied with a pad of cotton-wool. An interesting discussion ensued. Mr. Archer Clarke showed the results of some experiments of developing negatives with Amidol followed by hydroquinone, which were covered with black spots and utterly useless.

Louth.—On 20th inst. Mr. C. W. Hastings gave a lecture on "Picture-making by Photography," illustrated by lantern-slides from Mr. H. P. Robinson's pictures. Instrumental and vocal music was given at intervals.

Munster.—The first annual meeting was held on the 12th inst. Major Lysaght (President) occupied the chair. Mr. Franklin read the annual report, which stated that although the club had been only twelve months in existence its progress should be regarded as highly satisfactory. One hundred and nine members had been elected, and it was hoped this number would be added to in the eusuing session. There had been several disappointments in connection with the evening meetings, mainly owing to the late date last winter when the club was formed. This prevented arrangements being made beforehand for the supply of papers or lantern, but for the coming session a programme had been arranged, giving the business for each meeting. The society now possessed a very complete dark-room which, however, had not been used by the members to the extent expected, and they had, in addition, the use of the theatre for two evenings each month, and a room for meetings of the committee. The outdoor meetings could not be regarded as a success. Except on one occasion the attendance of members was very small. This was, perhaps, due to the fact that there was no regular half holiday in Cork, as was so general in other places. Owing to the pressure of business, Mr. Franklin had been compelled to resign his position as hon. secretary, and Mr. Baker had consented to undertake the duties. The club was greatly indebted to Mr. Franklin for undertaking the post of secretary and the formation of the club, when a great amount of organisation, entailing much serious work, had to be done. Mr. Bradshaw had kindly undertaken to superintend the lantern arrangements for the coming session. It was proposed to hold an exhibition of members' work, prints and lantern slides,at the School of Art; and itwas also suggested that an album to receive the spare prints which most photographers possess should be provided and circulated amongst the local hospitals. Mr. J. Day had kindly undertaken to look after this, and would be glad to receive contributions of prints. Mr. Atkins submitted a statement of accounts showing that the total revenue of the club was £30 17s., and the ordinary expenditure £20 13s., leaving a balance of £10 13s. 11d. to their credit. This sum was appropriated to the construction of a dark-room, oxygen cylinders, etc. The President, Vice-Presidents, and officers were re-elected. Mr. D. Franklin for Mr. R. S. Baker on the committee, Mr. Baker having accepted the office of Hon. Secretary, and Mr. Gerard Percival in place of Rev. J. O'Mahony, resigned.

North London.—On 18th inst., Mr. J. Traill-Taylor in the chair, copies of Messrs. Cadett and Neall's new monthly paper "Dry Plates" were distributed. Mr. Mackie showed an advance copy of the Ilford "Year Book," which was much appreciated. Nominations were received for election of Council at the annual meeting to be held on November 1st. The Chairman then brought before the members a series of notes on the reproduction of photographs by means of printing ink, in which he dealt with the various photo-mechanical processes from the time of Nicephore St. Niepce to the present, the process being not only described but illustrated by specimens.

North Surrey.—At the last meeting on 18th inst. Mr. Fitzpayne read a paper and gave a demonstration of the method of development of the new cold-bath platinotypc paper. He commenced by stating that the paper was more convenient to manipulate than the hot-bath paper, that the results achieved were superior, that the film was not susceptible to abrasion, and that the liability to scald the fingers was, of course, entirely absent; and then proceeded to practically prove his assertions by developing several prints, during which operation the remarkable control which could be exercised over the action of the developer was very apparent. He explained the necessity for printing the paper until the whole of the details were out; in fact, that printing should be carried as far as possible without solarisation, but stated that should this stage be reached, it was possible to print out with the paper, and then, of course, no development was necessary, the print only requiring to be fixed in the hydrochloric acid bath. He drew attention to the necessity of using a much weaker developer than was required for the hot-bath paper, and recommended the use of the Platinotype Company's D salts in the proportion of ¼ lb. to 48 oz. water, and showed how, when mixed with an equal quantity of glycerine, the operation of development was most simply performed with a brush, the print being stretched on a glass slab or on the bottom of a dish. After developing the prints with the most excellent results, Mr. Fitzpayne explained the process of toning, or, to describe it more more accurately, of printing the platinum image with uranium, for the formula of which he referred the members to his memo. on the subject in the "Camera Club Journal" for October. Numerous prints that had received this treatment were handed round for inspection, some showing the different shades that could be obtained, from light brown to a very deep red, and some, the bad effect of not entirely climinating the iron from the print before toning. In reply to a member, Mr. Fitzpayne explained why "painting" was an apter description of his process than "toning," as the whole resulting colour could be easily removed by immersing the print in a weak solution of ammonia.

Preston.—An appreciativc audience of members and friends met on 20th inst. to hear an interesting lecture on the "Architecture of some English Cathedrals," by Mr. E. J. Andrew. About one hundred beautifully-executed slides of the cathedrals of Canterbury, York, Durham, Ely, Salisbury, and Wells were used in illustration of various eras and styles of architecture, the particular beauties and prominent points of which were lucidly explained without confusing a general audience by the use of too many technical terms. The evening's entertainment concluded by the exhibition of three new comic sets, which were emphasised by original and extempore remarks by Mr. W. F. Livesey.

Putney.—The second meeting of the winter session was held on the 17th inst, the Rev. L. Macdona in the chair. There was a good attendance of members, the subject being "How to Make a Lantern Slide," by Mr. S. Herbert Fry. The Chairman, in opening the proceedings, said it would be unnecessary to introduce Mr. Fry to the majority of the members present, as his interesting lecture on "Bromide Enlargements," given before the society last year, would be fresh in their memories. Mr. Fry commenced by pointing out what qualities were necessary in good lantern plates, and in what particulars their treatment and the result desired differed from negative plates. The essential requirements of a good slide were that in some part of it there should bc absolutely clear glass, and that the darkest shadows should be transparent. In order to secure these results a fairly correct exposure was necessary, and forcing of development should on no account be attempted; he therefore recommended a standard developer, which by experience had been found to work well with the particular brand of plates in use, and that no modification of this should be tried in order to compensatc for over or under exposure. The use,of such a standard developer naturally required a more correct exposure, relatively, than that necessary for a negative plate, where a modification of the developer was permissible; but as the exposure of the lantern plate was under more perfect control,there would in practice be found little difficulty in giving the right time. The slides could be made in two ways, viz., by contact or in the camera. Contact printing was on the whole best done by artificial light, and in the camera by daylight. Mr. Fry showed a printing frame in which a slide could be made by contact from any suitable part of a larger negative; hc claimed no special advantage for the particular form of frame, but it was obvious that a contrivance of the kind was a convenience, not to say necessity, in successful working, as it was of importance that the edges of the lantern plate, *i.e.*, the thickness of the glass, should be protected against stray light; the omission of such protection was a frequent source of fog near the edges. With regard to the illuminant used during exposure, it was no doubt possible as a *tour de force* to use a wax vesta, but Mr. Fry said he would assume that the members generally worked with a paraffin lamp or gas burner, and these would perhaps be found the most convenient in ordinary work. Weak negatives were best printed from by a weak light, or at a considerable distance from a powerful one, whereas plucky or dense negatives would give the best results when printed close to a good light. The time of exposure would, of course, vary with the character of the negative, but the correct exposure could be readily determined in the following manner: Divide the plate approximately into say five strips, then shield four-fifths, and expose the one-fifth 10 seconds, the shield being then moved so as to screen only three-fifths, and kept in this position another 10 seconds, and so on until the whole of the plates have been exposed; one-fifth will then have been exposed 10, the next 20, 30, 40, and 50 seconds respectively. On developing this trial-plate in the standard developer it would at once be apparent which part of it had received the correct exposure. When the correct exposure had been once ascertained, it should be noted on the negative, together with the nature of the light and the distance from it, for future reference;

the negative envelopes now commonly in use lend themselves conveniently for notes of this kind, as well as for storage. The exposure being correct, the development in the standard developer would present no difficulties, it being only necessary to watch progress and to take the plate out when of sufficient density. On the subject of exposure in the camera, Mr. Fry said this could be done either in daylight or by artificial light. When daylight was used, the negative could conveniently be placed against the window and the camera pointed at it, and focussed to the desired size, care being taken that no buildings, chimneys, trees, etc., should appear behind the negative, as these would, of course, be reproduced on the lantern plate. It would not be necessary to exclude daylight from the room, but direct rays of light must be prevented from entering the lens, and this could be efficiently done by placing a piece of brown paper with a hole cut in the centre for the negative, against the window, the paper being of such a size as to cover the cone of light entering the lens; no further covering between the negative and lens is necessary. Daylight being very variable, no rule as to the length of exposure could be laid down. Generally a small stop should by preference be used in a fair light, so that the exposure might be well under control. As regards artificial light, the chief difficulty was to obtain even illumination of the negative. Mr. Fry said he had used with satisfactory results the following arrangement: The negative is placed at the end of a suitable box or frame opposite the lens, which may be mounted in the usual way on an ordinary camera, and the lantern plate exposed in a double slide, exactly as when taking a negative; special apparatus for making a lantern slide by reduction is frequently used, but, as will be seen, is no necessity. The illumination of the negative is obtained as follows: A piece of white opal, white paper, or a white-washed board is placed at some little distance behind the negative and parallel with it. On *each* side between the negative and reflector is placed a lamp or gas light, or other convenient illuminant; the two lights should be placed near the negative and as close together as possible, but without allowing any part of their images to enter the field of the lens. It has been found that by this system of using reflected light about 40 per cent. of the total is utilised, and that the illumination is very even. In order to obtain the best results, as large a stop as possible, consistent with the covering power of the lens, should be used. As an example, it may be stated that with a good light, and an average negative working the lens at *f*/16, an exposure of four minutes will be about right. One of the advantages of the reduction method in the camera is that by the careful use of the swing-back, divergent and convergent lines in the negative may be rectified in the slide. On the subject of printing-in clouds, Mr. Fry said that the easiest method was to print them on a separate plate and use this as a cover plate; due note being taken that when so placed the direction of the light would be reversed, and that therefore it was necessary to print from a cloud negative with the light coming from the right in order to suit a view which is lighted from the left, and *vice versa*. The cloud print should be given a comparatively short exposure, and should not be developed far, otherwise there was danger of loss of transparency. During the lecture Mr. Fry illustrated his prints by practical demonstration, exposing, developing, and fixing prints of views and clouds. The whole subject was brought before the meeting in a very thorough manner, and the interest was maintained throughout. At Mr. Fry's suggestion, questions were asked by the members during the course of the address, and a general discussion followed at its close. A hearty vote of thanks to Mr. Fry for his able and interesting lecture was proposed by Dr. Sheppard (Vice-President), and carried with acclamation. A special meeting of the society will be held on Monday, the 31st inst., at 8 p.m., when Dr. Jeserich will read a paper on "Photography Applied to the Detection of Crime." This is one of the series of papers which the Affiliated Societies' Central Committee have, by the courtesy of their authors, been able to place at the disposal of societies which have joined the affiliation. The next ordinary meeting will be held on Monday, the 7th November, at 8 p.m., when Mr. S. G. Buchanan-Wollaston will read a paper on "Platinum Printing Processes."

South London.—On the 17th inst. an ordinary meeting was held, the President, Mr. F. W. Edwards, in the chair. At the conclusion of the formal business Mr. Arthur C. Baldwin opened "A Chat on the Eastman Products." In opening he dealt with the various methods for producing the stripping films formerly sold by the Eastman Company, which ultimately led to the manufacture of the rollable film, as now manufactured. The method of using the roll-holder was also explained, and specimens shown. The "Solio" paper was then dealt with, and explanation was given as to the means to be adopted for producing a variety of tones. The formulæ for the borax bath (blue tones) and the combined toning and fixing bath (warm tones) were given with the paper when purchased. For rich velvety-black tones the following was recommended:—Phosphate of soda, 100 gr.; chloride of gold, 5 gr.; water, 40 oz. The addition of a pinch of aluminium chloride to ordinary alum bath materially assisted in the hardening of the gelatine film. Potash alum must always be used, as ammonia alum does not form in this case a good substitute. The combined bath was so simple "that a child can make and use it, i delightfully certain in its action, and is practically permanent." The proceedings terminated with the toning of several prints by the different baths, to show the tones obtainable. Attendance 48.

Sunderland.—The annual meeting was held on the 19th inst. Mr. J. Lynn presiding. The report shows the society to be in a flourishing condition, there being sixty-four members on the roll. The meetings during the past year have been well attended, and various competitions held, the chief prize winners being Messrs. Lynn, Peddie, and Cowper. The officers for the ensuing year were elected as follows:—President, Mr. W. Milburn; Vice-Presidents, Messrs. J. Lynn and W. Pratt; Council, Messrs. W. Bartram, J. W. Broderick, A. G. Boulton, E. R. Kirkley, Dr. Legat, A. Peddie, W. J. Pope, and R. Stafford; Hon. Treasurer, Mr. T. Walton; Hon. Secretary, Mr. C. E. Cowper, Thornhill Gardens, Sunderland.

Wakefield.—The annual meeting was held on the 12th inst., the President, Mr. A. W. Stanfield, J.P., being in the chair. The report took the form of an address by the President, in the course of which he reviewed the work of the society during the past year, which had, on the whole, been successful, and the society at present had a membership of forty-seven. The balance-sheet (presented by the Hon. Treasurer, Mr. C. W. Richardson) showed a balance in hand of £5 5s. 5d., which was considered satisfactory. The election of officers for the coming year was then proceeded with, and the following gentlemen were selected to fill the various posts:—President, Captain Norwood; Vice-Presidents, Mr. Isaac Briggs, J.P., and Mr. A. W. Stanfield, J.P.; Hon. Treasurer, Mr. W. Townend; Hon. Secretary, Mr. C. W. Richardson; Hon. Lanternist, Mr. J. H. Chaplin; Committee, Messrs. J. H. Chaplin, H. Crutchley, G. F. Firth, H. Parkin, H. Haigh, and W. Wrigley, after which slight alterations were made to the rules, the most important being the reduction of subscriptions from 7s. 6d. to 5s. The syllabus for the winter session was then read and approved, and the usual votes of thanks brought the business part of the meeting to a close. The late Secretary then showed the latest thing in hand-cameras, The Frena, and the ingenuity of its movements, particularly that for changing the films, and the general compactness and finish of the camera was greatly admired. A discussion on this and kindred subjects terminated a very pleasant evening's work. The society held their first weekly meeting under the new syllabus on the 19th inst., when a most enjoyable two hours were spent by those present listening to an account given by their new President, Captain Norwood, of his recent visit to the "Land of the Midnight Sun." He came to the meeting quite unprepared for the task that was going to be required of him, but his hearers did not appear to lose much on that score. In addition to describing his various adventures, and we might say misadventures—the latter, of course, being caused by the presence of that terrible instrument which is inseparable from a photographer when on the war path.—he gave most useful hints to those who were contemplating a visit to Norway, urging most strongly, for those who can afford it and on "photography bent," not to journey with a public excursion party, or they will find little time for anything but keeping up with the others in the general scramble to see everything or in securing comfortable travelling quarters for the next stage of the journey. He then went on to describe the journey from the Fjords to the North Cape, where he was fortunate in getting a good negative of the sun at midnight; and also his visit to the whaling station situated there, where by reason of an under-development of his olfactory nerves he was able to get a few photographs of two whales which had recently been brought in, whose skins were spread out to dry, and whose bodies were undergoing a general dissection, which gave rise to the most abominable stench imaginable, so much so that his friends having got a whiff of it, were content to use their most powerful telescopic lenses, and leave him sole honour of being photographer-general to the North Cape Whaling Station for that occasion. In conclusion he very kindly promised to show slides from all his negatives on one of the lantern evenings, and accompany same with suitable remarks.

West London.—The annual general meeting was held on the 14th inst., the President in the chair. The report was adopted, and the following officers were elected for the ensuing year: President, Mr. J. A. Hodges; Vice-Presidents, Messrs. W. A. Brown, C. Bilton, W. L. Colls, and C. Whiting; Council, Messrs. J. J. Adam, J. D. England, R. Horton, G. Lamley, H. Selby, A. W. Scanlan, G. E. Varden, R. W. Watson, J. Wilson, C. Winter; Hon. Treasurer, W. H. Whitear; Hon. Secretary, L. C. Bennett; Assist. Hon. Secretary, W. S. Rogers; Hon. Librarian, J. Wilson; Hon. Lanternist, R. Horton; Hon. Auditors, J. Stein and T. Turner. The terms of the amalgamation of the Chiswick Camera Club with the West London were formally agreed to, and it was felt that the example thus set by the West London and Chiswick societies might be followed with

advantage in those districts where two or more societies were trying to do the work which might be better done by one strong central society. The Chairman stated, that, owing to new arrangements having been made at the School of Arts, it was found impossible to hold the meetings on Fridays as heretofore, and after some discussion it was arranged that Rule 7 should be altered by inserting the word "Tuesday" in place of "Friday." The change of evening will, however, not come into effect for a few weeks, and members are notified that the next four meetings will be held on the usual Fridays, October 21st, Technical Social; October 28th, Presidential address and lantern; November 4th, Technical Social; and November 11th, Mr. E. J. Wall's paper. After that date, however, the alteration will come into effect. Happening at the last moment when it was totally unexpected, this has necessitated some alterations in the syllabus and will lead to a slight delay in getting it printed, but every effort will be made to make the delay as short as possible.

West Surrey.—Usual fortnightly meeting, the Vice-President, Mr. Winsford, in the chair. A large number of members were present. The subject of the evening was a demonstration by Mr. George H. James, of the carbon printing process. Mr. James went fully into all the details of both the single and double transfer processes, illustrating his remarks by prints from some of his very fine negatives. Mr. James, after having described the safe edge necessary in carbon printing, and various forms of actinometer to gauge the depth of printing by, went on to describe the development of the image. He said that one of the peculiarities of this process is that the development takes place from the back, this being due to the fact that the parts of the sensitive bichromated gelatine acted upon by the light is rendered insoluble in water, and as the light never did penetrate right through to the surface of the paper there was always between the insoluble gelatine and the paper a layer of soluble gelatine, which was dissolved out in developing, hence the necessity of fixing the print upon the temporary or permanent support before development. A large number of prints made by the Woodbury Company were handed round for inspection.

Wigan.—A meeting was held on the 20th inst., at the new rooms in the Y.M.C.A., Rodney Street, which are a decided improvement on the last. The following members, Messrs. Richardson, Betley and Smith, handed round a number of prints on "Solio" paper and P.O.P. toned in various baths, and finished in different styles, the matt-surfaced platinum toned finding the most favour. Mr. Lowe, the President, exhibited an album of his excellent instantaneous pictures in platinum, all taken with a Thornton-Pickard shutter, and several of which are to be reproduced by the Thornton-Pickard Company. He also gave his recently-acquired experiences of Fitch's films, which were decidedly in their favour, compared with plates, and exhibited two different forms of film carrier for the dark slide (Fitch's and Gotz's) which are both extremely simple. The second number of "Dry Plates" was distributed, and two new members, Messrs. Harold Tarbuck and Gasper Clephaw, were proposed.

SOCIETIES' FIXTURES.

Oct. 27.—HULL.—Developing Contest.
„ 27.—LONDON AND PROVINCIAL.—Members' Open Night.
„ 27.—PHOTO. SOC. OF IRELAND.—"Picture-Frame Making, Mr. J. Carson.
„ 28.—CROYDON.—Discussion on the Chemistry of Photography.
„ 31.—RICHMOND.—"Preparing Work for Exhibition," Discussion.
„ 31.—PUTNEY.—"Photography applied to the Detection of Crime," Dr. Jeserich.
Nov. 1.—STAFFORDSHIRE (Potteries).—"Process Blocks, etc.," Mr. W. Savage.
„ 1.—CANTERBURY.—Annual Meeting.
„ 1.—BOLTON.—"Development of Platinotype Prints," Mr. J. S. B. Wollaston.
„ 2.—LIVERPOOL (Y.M.C.A.)—"Photographic Processes," Mr. L. Hill.
„ 2.—CROYDON (Microscopical).—Conversational Meeting.
„ 2.—COVENTRY.—Annual Meeting.
„ 2.—EASTBOURNE—"Practical Demonstration of Platinotype Paper," Mr. S. Buchanan Wollaston.
„ 2.—THE PHOTO CLUB.—Annual Meeting.
„ 3.—LONDON AND PROVINCIAL.—"Rapidities of Various Printing Processes," Mr. B. Foulkes Winks.
„ 4.—ISLE OF THANET.—"Demonstration of the Platinotype Process," Mr. S. Buchanan Wollaston.
„ 5.—HULL.—"Photographic Trips," Mr. J. H. Allcott.

"Dry Plates," by Cadett and Neall, No. 2, for October, gives some very good notes upon weights and measures, and this usually dry and uninteresting subject is made very readable and plain.

It is now well known that a beam of light produces sound although comparatively few people have had an opportunity to test the fact for themselves. A beam of sunlight is thrown through a lens on a glass vessel that contains lampblack, coloured silk or worsted, or other substances. A disc, having openings or slits cut in it, is made to revolve swiftly in this beam of light, so as to cut it up, thus making alternate flashes of light and shadow. On putting the ear to the glass vessel, strange sounds are heard so long as the flashing beam is falling on the vessel. Recently a more wonderful discovery has been made. A beam of sunlight is caused to pass through a prism, so as to produce what is called the solar spectrum or rainbow. The disc is turned, and the coloured light of the rainbow is made to break through it. Now place the ear to the vessel containing the silk, wool, or other material. As the coloured lights of the spectrum fall upon it, sounds will be given by different parts of the spectrum, and there will be silence in other parts. For instance, if the vessel contains red worsted, and the green light flashes upon it, loud sounds will be given. Only feeble sounds will be heard if the red and blue parts of the rainbow fall upon the vessel, and other colours make no sound at all. Green silk gives sound best in a red light. Every kind of material gives more or less sound in different colours, and utters no sound in others.

Leytonstone.—The opening night of the winter season was held on the 1st inst., with an address by the President, Dr. W. Pickett Turner, who opened by complimenting the club on the position it had made and the strength it had attained, the muster being ninety-six members; he next went on to the science and art of photography, dealing with the chemistry, first giving with the aid of the black-board the various formulæ of the various salts and compounds used in photography, explaining that the rational changes were not chemical but molecular, advising beginners to study orthodox chemistry, first taking Roscoe or Fownes as their Bible. He next went on to the science of optics, and then touched on the art side of photography, and explained that manipulative dexterity can be acquired by practice, and how highly important for success it was that the best apparatus that could be afforded should always be had, particularly the lens, which was a sine qua non to good work, explaining that they were the cheapest in the long run, as they were always worth their money. The collodion process was next touched upon, and he was of opinion that notwithstanding the many advantages of the dry plate, collodion still held its own for transparencies and lantern slides. There was, he said, a branch of photography which had almost died out but was now coming to the fore again. He alluded to stereoscopic photography. He thought it one of the highest branches, and gave the most charming results, and strongly advocated it being taken up by the members. The evening closed with a hearty vote of thanks to the President for his highly interesting and instructive address.

The annual outing of Messrs. Morgan and Kidd's employés took place on 1st inst., when the party, numbering close upon one hundred, proceeded by rail to Portsmouth, and thence by tram to Southsea. Owing to the growth of the business, the number present this year was larger than at any previous outing. Upon arriving at Southsea the party proceeded to inspect the various places of interest. Dinner was served at the Esplanade Hotel, where full justice was done to the good things provided. One of the novelties of the dinner table was a unique invitation and menu card, designed by Mr. Durham (Messrs. Morgan and Kidd's chief artist), and executed in collotype by Mr. Berghoff, the plant for this process having recently been laid down at a great outlay. The health of Mr. and Mrs. Kidd was drunk with great enthusiasm, and a hearty vote of thanks was accorded to Mr. Kidd for his kindness in providing the day's pleasure, this being proposed by Mr. Ernest Morgan, and seconded by Mr. Dennes. Both spoke of the great interest Mr. Kidd always took in his employés, no matter how humble the position they might hold in his establishment. Mr. Kidd, upon rising to respond, was greeted with rounds of applause, and must have been gratified at a reception which clearly showed his popularity as an employer. He thanked them all for the kind way in which his name had been received, and expressed the hope that he and Mrs. Kidd might long have the pleasure of meeting them at similar gatherings. "Success to the Collotype Department," as the latest addition to this establishment, was proposed by Mr. Dennes and seconded in an able manner by Mr. Durham, who spoke at some length upon the great future which he believed was before this department. As the party were more inclined for sight-seeing than making speeches, an adjournment was made to the beach and pier, and at seven o'clock the journey home was undertaken. Richmond was reached shortly after ten o'clock, all agreeing that a most enjoyable day had been spent, and that the annual outing of 1892 would long be remembered.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

QUERIES.

5847. **Isochromatic Plates.**—Do these invariably need a yellow screen, and how would this be fixed to a combination rectigraph quarter-plate lens? Where could the screen be procured? Do the Isochromatic plates need backing to avoid halation in taking the interior of a church, and do they require longer exposure than ordinary plates?—E. M.

5848. **Sensitising Silk.**—Can anyone tell me how to sensitise silk for printing out, or where to buy it ready sensitised? I tried first by soaking silk in 10 per cent. solution of salt, and then in nitrate of silver, but on toning with borax nothing remained on the silk.—SORABJEE P. SETHNA.

5849. **Lens.**—Will someone oblige by telling me what kind of lens would be suitable for taking views on a small plate, say 1½ by 1½, having 1¾ focus, and where such lens could be got, single or double, but cheap?—R. W. C.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Sept. 30th.—No. 5822.
Oct. 7th.—Nos. 5827, 5828, 5831, 5832.
,, 14th.—Nos. 5834, 5835, 5836, 5837, 5841.
,, 21st.—Nos. 5844, 5846.

ANSWERS.

5838. **Carbon Enlargements.**—As Mr. Bennett appears to be familiar with the bromide enlarging process, I should think he would find no particular difficulty in the manufacture of carbon enlargements. An enlarged *negative* is first made, and the picture is printed by contact from this negative. The paper may be obtained from the Autotype Company, 74, New Oxford Street, W., in sheets cut to the ordinary photographic sizes, and ready sensitised. If Mr. Bennett is unacquainted with the carbon process he had better obtain the "A B C of Autotype Printing" from the Company, as it would be impossible to treat the subject adequately in this column.—O. W. DOWNING.

5839. **Lens.**—(1) The superiority lies in the fact that the portrait lens is about twice the rapidity of the R.R., their working aperture general y being about *f*/4. (2) Possibly, but no appreciable difference or practical gain.—O. W. DOWNING.

5842. **Chadwick's Stereo Camera.**—If "The Snipe" had written direct he would have had a reply per return post; as it is, he may get the reply in a fortnight, thus a long extension of time. Well, the camera is not provided with a double extension, and as the use of a single combination of an 8 in. R.R. lens for a half-plate is not to be recommended, it would have defeated the object for which this camera was designed to have made it so, adding unnecessary weight and expense. A 4 in. focus lens will do for stereo work if the lens covers the plate, and on a three-quarter plate will give just the same angle of view that an 8 in. focus lens would on a half-plate. The camera may be seen in London.—W. I. CHADWICK.

5843. **Riviera.**—Dark-rooms are generally found obtainable at nearly all the Riviera towns. A complete list of foreign dark-rooms has, I believe, been published by the AMATEUR PHOTOGRAPHER. I do not see what difficulties a lady need fear more than a gentleman, provided she keeps a very respectable distance off fortifications and the like. There is no difficulty, as a rule, with the Customs officials. It is best to be very courteous and frank with them, and they will not trouble you. They see so many cameras pass the customs that a little explanation will generally satisfy them. The Riviera is practically inexhaustible in resources for the amateur. The road from Nice to Genoa is full of picturesque scenery. Exposure not more than half that for England.—S. C. B. (Genoa).

5843. **Riviera.**—At Cannes there are dark-rooms at Numa Blanc Fils, and P. Benscher on the Promenade. A lady with a hand-camera might pass anywhere without hindrance. Shutter exposures may be made during the ordinary daylight, even of February and March, with medium rapid plates. Care must be taken in the very bright sunlight not to over-expose, as the light is far more actinic and the atmosphere much clearer than in England. About half of English exposures for the same time of day and year will be the best. I have found it best to change my plates at night, with red lamp and candle, and defer all my development until my return home. I have had no difficulty with Customs officials, even with many dozens of glass plates. Hand-cameras are seldom even noticed. It will be found advisable to take away material for a large number of exposures. I have found it difficult to obtain English sizes at the photographic warehouses abroad.—W. B. LEIGH.

5845. **Starch Mountant.**—A few drops of carbolic acid added when making the starch will act as a preservative, but the best way is to make fresh each time. G. W. DOWNING.

EDITORIAL.

J. N. WILLIAMS.—We regret that we cannot see our way to publish your letter re exposure tables. With regard to our lady competitor, we think you are certainly unfair. We know she works alone, and not with assistance. With regard to the other question, we at present hold our hand, but we shall speak presently.

TEPIDUS.—Many thanks for your note. We shall be very glad to have samples, and will report on the same in due course.

H. H. WESENCRAFT.—Your print duly received The question of tone is a purely personal one, though really it has little to do with the awarding of prizes, unless of course a very hideous, unsuitable, or uneven one is obtained. You are labouring under a great mistake if you think that the fact of a negative being taken with a rapid rectilinear will give it any advantage over one taken with a single lens. It is artistic and technical merit which always wins. On the other hand, there are occasions when an R.R. is useful and superior. We could not express an opinion on the lenses without examination; we should rather say go for a well-known maker, such as Crouch, Wray, Taylor, Perken, Son and Rayment, or Beck.

PT.—We referred to toning gelatino-chloride papers in general—not one in particular. All are amenable to this treatment.

JOHN HEYWOOD.—The formula which Isis spoke of is:

Sodium chloride or salt	64 gr.
Ammonium sulphocyanide	15 ,,
Gold chloride	2 ,,
Water	10 oz.

Print slightly deeper than required in finished print. Immerse in toning bath without previous washing, then pass direct to fixing bath.

H. HILL.—The developer can be used for landscapes, portraits, and interior work. Use it in the same way, but add half grain of bromide of potassium to every ounce of developer.

W. E. A.—The best guide-book to what to photograph is our 1892 Annual. The best guides to artistic work are H. P. Robinson's "Pictorial Effect in Photography" and "Picture Making by Photography," price 2s. 6d. each, to be had from our publishers.

ISOBEL, WATERBABY.—Mezzotype paper can be obtained from the Carlotype Company, Rainham, Essex; it is printed and toned in the usual way. We shall have a paper on it next week.

J. DRURY.—By our rules your queries are inadmissible. The camera you name is efficient, and can be used with artificial light, either gas, oil, or magnesium.

PRICE.—The advantages of gelatino-chloride printing-out papers are that there is a much finer rendering of detail, finer tones, and greater permanency, a high polish, or matt-surface at will. They may be toned and fixed in the same way, but better results are obtained by using the sulphocyanide and combined baths.

H. F. LINGING.—(1) It is usual to etch glass by placing two parts calcium fluoride in a leaden dish, make it into a paste with three parts sulphuric acid, stirring with a bit of wood. The glass to be etched is then placed on the dish as a cover, and the mixture gently warmed. This must be done in the open air or under a fume chimney. We believe a white acid used by glass frosters is made by taking strong hydrofluoric acid, and stirring in carbonate of soda, till a thick white paste is formed. (2) Ten minutes' washing after fixing is not enough before using the alum bath. Alum is recommended before toning so as to prevent the softening effect of the sulphocyanides. Chrome alum does not lose its tanning properties by being made alkaline, and it will keep for some time.

ECCLESIASTICAL.—Your query is inadmissible. Write and let us know what you want to do, interiors or exteriors, hand work and stand work combined, or what; then we can help you.

L. GUERONS.—Please number prints when sending for criticism. (1) Both figures are staring hard at camera, and the blank sky would be improved by clouds. (2) This might be a good picture, but it is utterly impossible to say from a bad blue print. (3) Wants at least 2½ inches off foreground, and clouds printed in. (4) Very fair, but wants clouds too. (5) Wants clouds, and the castle is too small.

F. W. NEALE.—The best book on photo-mechanical printing is W. T. Wilkinson's Photo-engraving Collotype," price 5s., publishers, Hampton, Judd, and Co., 13, Cursitor Street, Chancery Lane, E.C. We do not think you could get bichromate plates anywhere. They are usually prepared by the operators.

E. B.—Many thanks, but we are full up at present, or we would take advantage of your offer.

NEWSMAN.—See answer above.

ALPHA.—(1) We can recommend the camera named for good all-round work. (2) It is superior to the Instanto. (3) We should prefer a good rapid rectilinear, such as the Optimus, Crouch, Beck, Wray, or Taylor. (5) The R.R. is suitable for all work, and is superior to the lens sent with camera.

LOST IN THE COUNTRY.—Negative over-exposed, wants intensifying, too much foreground, and the whole of the wreck should have been got in. Print over-printed, over-toned, flat and poor. Is this outspoken enough to please? Send us up some more work to judge of your capabilities.

E. W. MALE.—A slow paper will give you better results, and we should advise you to stick to the iron developer. Rightly used, there is nothing to beat it. A good formula is

Amidol	1 part
Sodium sulphite	10 parts
Distilled water	200 ,,
Bromide of potash	½ part.

for plates. For paper, dilute with an equal quantity of water, and increase bromide to 1½ parts. Carrying the lens and camera on bicycle would not damage lens. You will see some notes on ferrocyanide and amidol in this week's issue.

PROFESSIONAL.—(1) The print should have been toned longer. (2) Both papers may be used. The sepia tone is much admired by some, and looks very well with matt-surface prints.

W. PRICE.—(1) Too much pews; the rising front should have been used; rather over-toned. (2) Over-printed. (3) Good, though clouds would improve it. (4) Better still, the richer tone is more pleasing. (5) Printed too deep. (6) The right depth of printing, but over-toned. (7 and 8) Both over-toned. (9) Over-printed. (10) Just right, really very nice. (11) Over-printed. (12) Over-toned.

AMATEUR.—Intensify your negative, or else retouch the face, or else work on the back of the negative with matt varnish and a stump. With the improvement of the face it would be a very fair portrait.

D. W. F. M.—You could not copy the print and sell prints, or allow anybody else to sell them, without infringing the copyright, but possibly the firm who took the negative would give you permission, or even sell you the negative. We shall be pleased to see prints.

E. B. H.—We prefer the first-named, and the results are quite good enough to enlarge from.

W. J. S.—The translators are wrong; the only paper on the market containing an appreciable amount of chloride is Alpha. The process for distinguishing between the two is not easy.

MISS L. RIDLEY.—The peculiar colour of the negative is due to iridescent or green fog, which is generally caused by forcing with too much alkali, or else an impurity in the developer. We believe that the adhesive mounts are not now on the market.

HALATION.—We should use medium isochromatic, and with the largest stop that will give you sufficiently sharp definition, say *f*/22, at midday, without sunshine, the exposure should be about 10 secs., but of course this depends so much upon how much light there is.

B. PUCKLE.—Probably your lens is not corrected for photography; try stopping down or after-focussing, shifting the paper just a shade closer to the lens.

ROBIN.—The cause of the marks on negative is, we believe, drying the negative by heat, or unequal drying. (1) Too much foreground. (2) Rather over-toned. (3) Far too formal in composition. (4) Good, a little too much foreground. (5) Wants clouds. (6) Over-toned and flat. (7) Rather uninteresting, nicely exposed and developed, though. (8) Wants less foreground and clouds. Toning with platinum is not difficult. The bath is—

Chloroplatinite of potash	1 gr.
Bitartrate of soda	30 ,,
Distilled water	4 oz.

A. W. DOWNING.—The amount of enlargement, and the number that can be enlarged, depends to a great extent on what developer was used. This you do not say. Longer soaking should put the matter right.

HALF-PLATE.—(1) Rather under-printed, and the dark shadow looks as though the negative had not been kept carefully rocked when developing. (2) As the needle was the principal object, you should have got nearer to it, and focussed down sharper. Now it is not a bad view of the Embankment.

DOZEY G.—Many thanks, please send paper on, very glad to have it.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

Cameras, etc.—Lancaster's quarter-plate Instantograph, complete, new last May, with one extra dark slide, box and strap, 42s.—Webster, 29, Earl Street, Broughton, Manchester.

Camera, half-plate, square leather bellows, rising front, double swing back, with two double dark slides (book form), 35s.—8, Berkley Road, Westbnry Park, Bristol.

Cameras, Lenses, etc.—Half or whole plate camera, two or three slides, good lens, for cash, cheap, or exchangs portrait lens.—No. 349, office of this paper, 1, Creed Lane, E.C.

Hand-Cameras, etc.—Facile hand-camera, R.R. lens, with solid leather case.—F. C. Newland, Kingstown, Dublin.

Lanterns, etc.—Lantern, 4 in. condensers, best achromatic lens, 3-wick lamp, and double slide carrier, packed in neat carrying case, new four weeks ago, bargain, 25s., cost 40s.—Dnnlop, 7, Cathedral Street, Glasgow.

Pair oxy-bydrogen lanterns, bronzed tin bodies, 1¾ in. objectives, 4 in. focus, compound condensers (double convex and concave convex), 4 in. diameter, 4 in. focus, blow-tbrough jets, six way dissolver, and rubber tube, in painted lock up travelling case, £5.—Whitehead, 141, Manchester Street, Oldham.

Lantern, 3½ in. condensers, photo lens, front, cheap.—75, Monument Road, Birmingham.

Lenses, etc.—Rapid rectilinears! Frencb make, special value, 5 by 4, 5½ in. focus, 11s. 6d.; 7 by 5, 7¼ in. focus, 14s.; 9 by 7, 11 in. focus, 20s., complete witb bood, flange, cap, and set of Waterhouse stops, largest aperture *f*/8; three days' trial allowed.—Dorey, Lester and Co., Kilburn, London.

Splendid half-plate rapid rectilinear lens, iris diaphragms, 18s.—A., 8, Kenilwortb Road, Willesden Lane, London.

Will exchange 5 by 4 Optimus rectilinear lens, Waterhouse diaphragms, fitted with pneumatic plunge shutter. and perfect, as new, for 5 by 4 Optimus euryscope lens, iris diaphragms, in good condition; approval; specimens.—J. K. Smith, Little London, Rawdon, Leeds, Yorks.

Half-plate rapid rectilinear lens, with iris diaphragms, good as new, only 17s. 6d.; camera case, 5s.—Cheltenham House, Stroud.

Sets. — Lancaster's quarter-plate Instantograph, new, including camera, lens, iris stops, two double slides, stand in case, bag for camera, also rod to attacb to cycle, 40s. Want half-plate.—Williams, 16, High Street, Leicester.

Half-plate long-extension camera by Perken, Son, and Rayment, turntable, R.R. lens, three-fold stand, three dark slides, two strong cases, Thornton-Pickard shutter, all accessories, forming complete outfit, sell cheap; can be seen by appointment. — Creasy, 69, Cornhill.

Relinquisbing photography. £7 will purchase my half-plate camera, splendidly made, witb three double dark slides, a wbole-plate London Stereoscopic rapid landscape lens, long focus, Black Band series, in conical mount, splendid definition, Decoudun's photometer, and an Ashford patent folding tripod; the lot cost £10 5s.; I will send on approval on deposit.—Williams, Liberal Club, Saffron Walden.

Quarter-plate Simplex pocket camera in case, with three double backs, special R.R. lens, finder, etc., neat little set of first-class workmanship, bougbt last August from Dollond for £4 17s. 6d., and scarcely used, price £3 15s.—Letters to H. A., 139, Dashwood House, London, E.C.

Sundries.—Will exchange gold watcb, etamped 18 c., for good hand-camera, R.R. lens; approval.—E. A. Lunn, College, Rosscarbery, co Cork.

"Amateur Photographer's Annual," 1892, 1s. 6d.; "Ilford Manual," 8d.; 10 numbers AMATEUR PHOTOGRAPHER (June, July, August), 9d.; all post free.—Geo. Birtwbistle, 8, George's Road, Liverpool.

"Boy's Own Paper," vols. 3, 4, 5, 6, monthly parts; offers wanted; cash, or photographic exchange.—Abc, 124, Malmesbury Road, Bow.

Two mixed gas jets, 16s. pair; sixteen plain and coloured slides, 5s., post free; or will exchange for slipping or life model slides.—H. Bamford, Augusta Street, Rochdale.

WANTED.

Cameras, etc.—Wanted, good second-band wbole-plate camera, double extension to quite 22 in., two or three double backs to fit same; mnst be cheap and in good condition.—Lockwood, Sedbergh, Yorks.

Good quarter-plate camera, casb or exchange; have for disposal two safety bicycles, two watches, and 5 by 4 camera.—Readbead, Flamboro', Yorks.

Cameras, Lenses, etc.—Half-plate camera, rectilinear lens, etc., of latest pattern; also a good hand-camera; handsome exchange offered.—78, Clifton Street, Brooks Bar, Manchester.

Enlarging Apparatus.—Multum-in-Parvo enlarging camera.—Pellatt, The Friars, Muswell Hill.

Hand-Cameras, etc.—Good hand-camera; exchange large six-air musical box, or sell £2.—Frederick Sharpe, Churcb Street, Oakham.

Wanted, Watson's hand-camera, quarter-plate.—W. Walker, 156, Noel Street, Nottingbam.

Twin, or divided, focussing hand-camera, quarter-plate, no lenses.—Whitebead, 141, Manchester Street, Oldham.

Rollholder. — Eastman quarter-plate rollbolder, latest pattern.—H. Norris, 15, Seymour Grove, Old Trafford, Manchester.

Sets.—Wanted Lancaster's half-plate Instantograph outfit, cheap for cash.—J. Clarke, Prospect Place, Grantham.

Stereoscopic Apparatus. — Stereoscopic camera and lenses, together or separate.—H., 100, Dalling Road, Hammersmith.

Lanterns! Lanterns!! Lanterns!!! Slides! Slides!! Slides!!! The largest and most varied selection in the whole kingdom. Before selecting elsewhere, call and inspect the stock of the City Sale and Exchange, 54, Lime Street, Leadenhall Street, City, where we have no hesitation in saying you will find all that you require in this way. Lanterns for sale, lanterns lent on hire, lanterns sold on commission, or taken in excbange for other apparatus. Write for special supplemental lists, Manager, City Sale and Exchange, as above.

Bargains in Lenses.—9 by 7 Optimus rapid euryscope lens, grand definition, Waterhonse stops, as new, £5 5s.; Ross' half-plate rapid symmetrical, as new, Waterhouse stops, £3 17s. 6d.; Lancaster half-plate wide-angle rectigraph, iris stops, 30s.; half-plate landscape lens (rapid view) by Hinton, Strand, 15s.; 5 by 4 Optimus rapid Eury scope, Waterhouse stops moveable hood, 5½ in. focus, 47s. 6d.; quite new wholeplate rapid rectilinear by Charterhouse Stores, Waterhouse stops, best condition, 35s.; Lancaster's half-plate Instantograph lens, iris stops, grand definition, time and instantaneous shutter, 16s.; pair stereoscopic wide-angle rectilinear, by Charterhouse Stores, rotating stops, 4 in. focus, 45s. pair; Swift 5 by 4 wide-angle rectilinear, 5 in. focus, rotating stops, 32s. 6d.; Beck's 8 by 5 Autograph rapid rectilinear lens, iris stops, 9 in. focus, £3 12s. 6d., as new; Dallmeyer portrait lens, c.d.v., grand definition, Waterhouse stops, finest order, 63s.; 7 by 5 Optimus rapid rectilinear, Waterhouse stops, as new, 42s. All above lenses are warranted as described.—On view, City Sale and Excbange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus hought, sold, or taken in exchange.

Bargains in Hand Cameras.— Roucb Eureka hand-camera, size 5 by 4, carries 12 plates, Rouch R.R. lens, finder, focusser, etc., covered leather, and in leather case, £4 17s. 6d.; Talmer No. 3, fitted with Euryscope lens, iris stops, two large finders, time and instantaneous shutter, lever focussing, as new, £5 5s.; Optimus Ubique hand-camera, fitted Optimus R.R. lens, instantaneous shutter, three double slides, finder, adjustable focussing. £2 17s. 6d.; Kodak No. 1, best R.R. lens, carries 100 films, best order, in leather case, 40s.; McKellen's hand-camera, R.R. lens, shutter, carries 12 quarter-plates, covered leather, as new, 35s.; No. 1 Talmer, best lens, two large finders, time and instantaneous shutter, carries 12 quarter-plates, changing bag, as new, 62s. 6d.; No. 3 Kodak, very finest order, new spool films, rapid rectilinear lens, etc., solid leather case, £5 7s. 6d.; Beck's Frena band-camera, new packet films, latest pattern, £4 4s.; Samuel's hand-camera, 9 by 12 centimetre, rectilinear lens, time and instantaneous shutter in case, quite new, take 32s. 6d.; Luzo's hand-camera, Robinson, Regent Street, quarter-plate R.R. lens, instantaneous shutter, carries 100 films, solid leather case, quite new, £4 17s. 6d.; Kodak, No. 4, size 5 by 4, new spool of films, warranted finest condition, in leather case, take £7 7s., cost £11 7s. 6d; Adams' Ideal band-camera, twelve quarter-plates, finest rapid rectilinear lens, time and instantaneous shutter, as new, £5 15s.; Fallowfield's Facile, fitted rapid rectilinear lens, carriea twelve quarter-plates, as new, £3 17s. 6d. Optimus magazine hand-camera, covered leatber, carries 12 quarter-plates, finest Optimus rapid rectilinear lens, two finders, shutter, etc., as new, take £5 5s. All above are warranted as described. On view, City Sale and Excbange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second band apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Cameras and Sets.— Whole-plate camera, by Hare, back extension, leather bellows, reversing, rising, falling, and cross front, double dark-slide, Hare's patent changing box for twenty-four plates, rapid symmetrical lens, Waterhouse stops and folding stand, £7 17s. 6d.; Lancaster's half-plate Instantograpb camera, moveable baseboard, view and landscape lens, iris stops, double slide, and folding stand, 37s. 6d.; half-plate Optimus "portable" folding camera, leather bellows, rising and falling front, good lens for views and portraits, two double book slides, mahogany plate box, and folding stand, take £2 17s 6d.; Optimus half-plate Rayment camera, reversing back, and all best movements, fitted rapid rectilinear lens, iris stops, three double slides, and three-fold stand, grand set, as new, £7 7s.; half plate Underwood's Instanto wide-angle movement, double extension, fitted rapid rectilinear lens, slide, and folding stand, £3 17s. 6d.; half-plate camera, by Houghton, all latest movements, grand article, fitted three double slides, rapid rectilinear lens, and double folding stand, £6 10s.; Underwood's quarter-plate Convention camera, all movements, lens, double slide and folding stand, 27s. 6d.; quarter-plate Lancaster's Merveilleux set complete, 15s.; Meagher's quarter-plate camera, wide-angle movement, reversing back, fitted Ross landscape lens, five double slides, solid leather cass and folding stand, 75s.; Lancaster's quarter-plate Instantograph, finest order, all latest improvements, including camera, lens, iris stops, two double slides, stand and case, 37s. 6d.; half-plate camera, reversing back, and rapid rectilinear lens, works *f*/8, both by Dollond, Ludgate Hill, double slide and folding stand, as new, take £4 4s.; 5 by 4 best quality camera, by Robinson, Regent Street, leather bellows, rising, falling, and cross front, wide-angle movement, three double slides, fine rapid rectilinear lens, by Robinson; Newman's shutter and Eastman's ¼-plate roll holder, quite new, £5 17s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bougbt, sold, or taken in exchange. Inspection invited.

Magic Lanterns and Slides. — Walter Tyler's Helioscopio is perfection of all lanterns, applied to Indian Government, School Boards, scienoe classes, clergy, and exhibitors throughout the world. Impossible to have lanterns give better definition or more satisfactory results; specially construoted lens, which no other lantern possesses.—Walter Tyler, 48, Waterloo Road, London.

Walter Tyler's Best Triples and Biunials are unsurpassed, and perfect in every detail. Good biunials, mahogany bodied, brass fronts, and all improvements, £7 10s.; single lantern, witb 4 in. condensers, portrait front lens, 4-wick lamp, complete, in case, 27s. 6d.—Walter Tyler, 48, Waterloo Road, London.

Lantern Lenses.—Specially constructed. Walter Tyler's new Helioscopic portrait combination lantern lens gives the most perfect definition and brilliancy, can be fitted to any lantern, and for excellence cannot be surpassed. No other maker has this lens, which is manufactured expressly for Walter Tyler, 48 Waterloo Road, London.

Regulators and Gauges.—Great reduction, in price. Either can now be had of Walter Tyler for 14s. eacb. The largest stock of gas cylinders in England. Best seamless steel, tested and valved, and all sizes at very low prices.

Slides from Negatives and Pictures —Walter Tyler manufactures and colours slides on the premises, thus ensuring speedy delivery, and prices are most moderate.—Walter Tyler, 48, Waterloo Road, London.

Biunial Lanterns.—If you are in want of a really good biunial lantern, perfect in every respect, call and see Walter Tyler's entire brass fronted, mahogany-bodied, lined with Russian iron, and fitted with new best quality lenses, and sold at a most moderate price. The top lantern will take a 4-wick lamp. These are great bargains.—Walter Tyler, 48, Waterloo Road, London.

Hire Department is now perfect. Largest and best collection of slides in the world; over 200,000 always in stock. Temperance, travels, Scripture, educational, comic, tales, etc. Cheaper than any other house, no extra charge for coloured slides or effects. Special terms for large quantities.—Walter Tyler, 48, Waterloo Road, London

Lanterns and Slides.—If you wisb to hire, purchase, or exchange, you cannot possibly do better than go to Walter Tyler, who makes this business a specialite, and you will thus save dealer's and all intermediate profits.—Walter Tyler, 48, Waterloo Road, London.

Second-hand Lanterns and Slides at very moderate prices, also all kinds of apparatus. Send for large catalogue, 420 pages, with instructions for working lanterns of all kinds, and costing an immense sum to produce, sent free for 6 stamps. Small catalogue and second-hand list, post free.—Walter Tyler, 48, Waterloo Road, London.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

ENLARGING APPARATUS. — Hume's enlarging apparatus, 5 in. condenser, witbout objective, 61s.6d.; with 8 in condenser. 122s. 6d., carriage paid.—Hume, 1, West College Street, Edinburgh.

THURSDAY, NOVEMBER 3RD.

THE REMAINING STOCK OF PHOTOGRAPHIC APPARATUS OF MR. J. WERGE.

MR. J. C. STEVENS will Sell by Auction at his Great Rooms, 38, King Street, Covent Garden, on Thursday, Nov. 3rd, at half-past 12 precisely, the remaining Stock of Photographic Apparatus, Chemicals, and Sundries, of Mr. J. Werge, late of 11a, Berners Street, W., including Dallmeyer and other Lenses, Cameras, etc., and a Unique Collection of Historical Apparatus, Books, and Picturea relating to the early process of Photography.

On view the day prior, 2 till 5, and morning of Sale, and Catalogues had.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 422. Vol. XVI.] FRIDAY, NOVEMBER 4, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

Our Views.—New Blood in the Editorial Staff—Photographic Exhibitions—Exhibition Awards—Professional *v.* Amateur—Limitation of Members—Pot-Hunters—Photographing Thoughts—To What Shall We Come—The Platinotype Company's Demonstations—Mr. Maskell's Visit to Paris—The First Lecture—"Photographs of the Year"—Combination Printing—Artistic Work—The Camera Club: Exhibition Crowded—The Fuzzitypes—Ruskin's Dictum—Hollyer's Exhibition—A Storehouse of Study—Optimus Competition—P.B.A. Lantern Show—Dollond's Monocle—The Polytechnic Technical Lectures.

Chit-Chat, by Chatterbox.

Letters to the Editor—The P.B.A. (Snowden Ward)—Toning Chloride Paper (Edwards)—Mason's Toning Bath (Nash)—A Universal Hand-Camera (Bruno)—The Amateur Photographer Lantern Slide Competition (Harvey George)—The Charitable Lantern Entertaining Society (Foulkes Winks)—Amidol (Sutton)—Exposure (Watkins).

Articles.—Study and Practice of Art in Field Photography (Hinton)—Working with Spectacle Lenses—Hints on Posing—Notes on the Permanency of Gelatino-Chloride Prints (Woodbury).

Exhibition.—Southport.

Review.—"The Art Annual."

Catalogues.—Tweedie—Vevers—Underhill—Baird—Hughes.

Apparatus.—Mezzotype Paper—Duran's Backgrounds—Thiotone—Noxinol—Lantern Improvements (Phillips)—Scholzig's Enamel Paper—Tome's Negative Box.

Societies' Notes.—The Border Am. Phot. Assoc.—Uttoxeter Officers—Cornish Camera Club—Glasgow and West Scotland Exhibition—Hackney Exhibition—Aston Phot. Soc.—Oldham Phot. Soc. Report—P.S.G.B.

Societies' Meetings.—Cardiff—Croydon—Devonport—Fairfield—Glasgow High School—Harlesden—Hackney—Liverpool—Liverpool (A.P.A.)—Margate—P.S.G.B—Richmond—The Lantern Soc.—Torquay.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months, 5s. 6d.....		Twelve Months,		10s. 10d.	
Postal Union	"	"	6s. 6d.....	"	"	13s. 0d.
Out of Postal Union ..	"	"	7s. 9d.....	"	"	15s. 3d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 42.—"Sea Pieces and River Scenery." Latest day, November 21st.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, December 9th.)

We are introducing new blood into the Editorial staff, which will the better enable us to meet the increasingly diversified tastes of our readers. From the severely scientific to the extreme artistic is a pretty wide range, but we do not fear to promise that the covers of the Amateur Photographer shall contain fair measure of both, and of the numerous intermediate matters which are for the average reader. A contemporary skittishly refers to us as "The Immature Photogenic." If "immature" because we have not yet attained our highest ideal, well and good. *Non eram quod sum, non sum quod ero.* We have good things in store which may yet beat the record.

Photographic exhibitions are just now so plentiful as to be quite epidemic in character, and the respective methods of organisation with regard to the distribution of awards are as varied as they are unsatisfactory, and give serious grounds for thought.

To commence with, the Invitation Exhibition at Charing Cross has no awards of any kind. At Pall Mall we have awards, all of equal value, but no classes. At Leytonstone professional photographers are debarred from taking medals, a serious mistake which we understand the executive have already recognised. At Exeter and at Hackney there are four open classes; at Tunbridge Wells four open classes for amateurs, and a like number of professionals.

Still this separation of professional from amateur! How long shall this tradition of a past age remain? Witness the medal takers at Pall Mall this year. Does it look as if in an "open" competition the *amateur* photographer is at a disadvantage? In the classes for "members only" it may be only fair to take the opinion of the members of the club, but in those classes which appeal to all outside the society let them be *open* without qualification of any kind.

There's another point to which we would call attention, and that is the limitation of medals that can go to one exhibitor. The baneful influence of the absence of any restriction of this kind was painfully noticeable in a recent exhibition in the East of London, when one exhibitor took first medal in some four or five classes, and *first* and *second* in one class! Where this is possible in a young society the members of which are mostly beginners, it only needs a thoroughly good all-round worker to become a member

and enter for all classes, for him to "sweep the boards," so to speak, and take medals by the dozen, and—with sorrow we confess it—there seem to be some exhibitors now-a-days who would not flinch at committing such an act as this.

SYSTEMATIC medal-hunters—"pot-hunters" if you will, only we don't like the expression—are not far to seek in photographic circles. Would that some influence could be brought to bear upon these gentlemen which would restrain them from sending into every little local exhibition. Their practice is not a very dignified one, and when they do chance to get beaten and have to give first place to some unknown tyro—and it happens so sometimes—the position is almost ludicrous. Theoretically there is nothing to be said against the competitor sending in to all classes and carrying away the prize in each, neither can we find any logical reason why duplicate prints of the same picture should not be entered and medalled for different classes,



"TWO OF OIRISH."

Snapshot by F. W. Hindley. Taken with the "Midl" Hand Camera.

nor yet why previously successful work should not be admitted. But perhaps because the whole system of medal giving is wrong, it therefore becomes necessary to adopt some arbitrary regulations which shall prevent the abuse of the usual rules and conditions. Well, time and experience may right these matters, meanwhile we state our views and invite the suggestions of others.

LAST WEEK the hypnotising of the image on a photographic negative was talked of, and now it is announced we are to have the photography of thoughts. How is it done? say you. Perhaps the discoverer's own statement will be lucid enough without any comments of our own. He says:—

"Since the cerebral radiations—consequence of the brain vibrating in unison with the external vibrations which convey to us the perception of things, and which alone explain the phenomena of suggestion—are analogous to the radiations of light and heat, one can easily conceive the possibility of obtaining on a photo-plate suitably sensitised, their equivalent in photographic impressions."

POSSIBLY "*one* can easily conceive." Some people can imagine anything. Not long ago some one read a paper at the Camera Club on "The Photographic Expression of Thought," but he didn't come to this height, after which the photography of the shades of the departed, or of burglars "in the act," or the snap-shotting of Cabinet ministers as they arrive in Downing Street are insignificant achievements.

THE Platinotype Company are not content with the present wide use of their incomparable papers, and with admirable enterprise have made arrangements for lectures and demonstrations both in this country and on the Continent, so as to make the simple manipulations which the platinotype papers require thoroughly familiar to all. Thus, whilst in London and the provinces Mr. Buchanan S. G. Wollaston has been appointed to give special demonstrations and lectures, Mr. Alfred Maskell starts this week for Paris on a similar mission.

FOR this task Mr. Maskell's mastery of the French language fits him, and he takes with him a capital collection of pictures by most of the well-known workers in platinotype, illustrating the various methods and styles to which the process lends itself. Strange to say, platinotype is comparatively little known in France, and it may be readily imagined that the class of French photographers to which Mr. Maskell will address himself will not be slow to recognise and welcome the artistic advantages of Mr. Willis's process.

THE first lecture will be given in the handsome and spacious rooms of the Geographical Society in Paris, and is to be quite a *solemnitie*. We understand that Brussels, Vienna, Berlin, and other continental cities will be similarly visited in duo course.

PROBABLY by the time that our present issue is in the hands of readers, "Photographs of the Year" will also have reached the subscribers and those who have ordered in advance. Although issued from the same publishing office, and in some way connected with ourselves, we do not hesitate to say that the work is in no way behind its predecessor of last year; and, indeed, as with the progress of time might be expected, we consider the illustrations superior in many ways. As is generally known, it is not without its rival. No doubt there is room for both. Any way, it is first in appearance, as we prophesied it would be, and this, at least, we know that the selection of pictures was made absolutely without prejudice, and made from amongst the pictures as they hung in the Pall Mall Gallery with all the advantages or disadvantages of surroundings. We should not like to say that possible exhibitors were approached by someone else by letter long before the Exhibition was opened, but if such a thing were done, it was *not* done for "Photographs of the Year." Does anybody plead guilty?

COMBINATION printing is bad enough—that is to say, in practice. Theoretically we have not a word to say against it, and when it simply implies the wedding of clouds to landscape, there is less danger of incongruity, and with knowledge and judgment the practice has everything to recommend it. But when it is attempted to compose a picture by the combination of two or more negatives the result is hardly ever, practically never, satisfactory—falsity of tone, want of harmony, error in lighting seem ever present. And if this be so of combination, what about composite photography? But it is probably the former to

which the *Daily Chronicle* refers in the following paragraph :—

"The new-fashioned 'composition photograph' is responsible for a good many absurdities, but we have seldom seen anything so entirely idiotic as the specimens of 'composition photograph' of the time in the *Century* for November. The subject is the reprisals of the Paris Communists of 1871, when six hostages were shot in La Roquette and sixty-two in Belleville. The first of these represents a firing party three deep, the first and second ranks having the muzzles of the rifles of those in their rear placed just behind their ears. Needless to say, no man in the first two ranks would ever have heard a sound again if the rifles had been fired in that position. The second picture shows a crowd of a hundred people firing indiscriminately with rifles and carbines and revolvers over each other's shoulders, eight or nine deep. We should have thought that the war experiences of the editor of the *Century*, which have extended over so many hundreds of his own pages, would have saved him from reproducing such pictorial nonsense. It is impossible, of course, that Mr. Archibald Forbes can have seen these illustrations."

Yes, "composition" or "combination" photography has earned a bad name on account of just such absurdities as the above. Like other branches of photography, it is not so much that the principle or the process is bad, but that its exponents are usually wanting in ability to the utmost, or, further, are either blinded by the pleasure of having achieved some measure of success, or are deficient in perfect judgment, and thus do not perceive faults in their own work which are immediately apparent to another.

It is the old question — it is one thing to produce an artistically satisfactory photograph, it is a greater thing *to know it to be such*, and, obversely, we may feel ourselves capable of producing artistic work, may attempt it, and through our own coloured glasses—the knowledge of good intention—may fancy ourselves far more successful than we really are. Herein is the application of the maxim, "We are judged by what we have actually done, not by what we know ourselves capable of."

Anent the Camera Club Exhibition, we understand the number of visitors far exceeds anticipation, and some of the members who are *habitués* of the general club-room rather resent the constant intrusion of strangers. But the grievance, if it be one, will not be of long duration; another few weeks and the first photographic salon in this country will have become a matter of history. Those who have not yet visited this noteworthy exhibition of artistic work should not miss the opportunity. Be it regarded as a new and original venture, an experiment, or as the split from Pall Mall, it cannot fail to be interesting and instructive.

What say those of our contemporaries who but a short while since had not a good word to say for the "Fuzzitypes" and their producers and supporters? Amidst the chorus of applause there is not one dissentient. Perhaps the surest sign that a new school, a new style is something more than a passing fashion is that it can outlive severe adverse criticism, and subsequently secure the adhesion of its earlier antagonists. Here we have the ultimate impressions which are the result of cultivation enduring, where immediate likes and dislikes have proved their falsity by their evanescence.

What says Mr. Ruskin?—"The temper by which right taste is formed is characteristically patient. It dwells upon what is submitted to it. It does not trample upon it—lest it should be pearls, even though it look like husks. It is good ground, penetrable, retentive; it does not send up thorns of unkind thoughts, to choke the weak seeds.... It clasps all that it loves so hard that it crushes it *if it be hollow*."

Amidst the number of exhibitions—pictures and photographs—which are now being held in London, Mr. Frederick Hollyer's platinotype reproductions at the Dudley Gallery should not be forgotten. The collection, numbering some 220 works in all, are a magnificent monument to the painstaking life-work of Mr. Hollyer. One finds here reproduced in monochrome the paintings of E. Burne-Jones, A.R.A., D. G. Rossetti, G. F. Watts, R.A., Botticelli, Hobbema, Corot, Sir Joshua Reynolds, P. P. Rubens, Geo. Moreland, Velasquez, Raphael, L. da Vinci, Perugini, and a host of other masters, and also several prominent members of the New English Art Club.

There is here a veritable storehouse, an inexhaustible fountain of study and inspiration for any art student, and to the art photographer; the fact of their being in black and white will make them the easier to study, and their lessons the easier to apply to his own work. We should like all our readers if possible to see Mr. Hollyer's exhibition, which remains open for yet two or three weeks. Mr. Horace Townsend concludes his preface to the catalogue with the following paragraph :—

"The charge has, and not without foundation, been brought against Mr. Hollyer's reproductions that there is in them not only the original artist, but a suggestion of Mr. Hollyer himself, and this in spite of the fact that there is absolutely no retouching of the negative. So far from looking upon this as a defect, it seems to me to be the differentiating touch which elevates his work from a process into an art.'

Note, when at the Dudley Gallery, the total absence of white mounts, and reflect on the enormous gain to the pictures, individually and collectively, which is derived by the dark mounting and framing. What suggestions for framing are here! See that you profit by them.

We have received several letters from correspondents complaining as to the short period which has elapsed since their holidays and the closing of our Optimus Competition. We have therefore decided to extend the time of receiving prints till November 30th, although this will lead to rather more work, the number of prints now having been sent in being rather more than we usually get for a competition. But then we suppose £105 of apparatus is worth trying for.

We would remind our readers that the Photographic Society of Great Britain is devoting the proceeds of its Exhibition and Lantern Show at the Pall Mall to-night (Friday, November 4th) to the Photographers' Benevolent Association. This annual benefit which is given to the Benevolent by the parent society usually realises a good sum. Last year it amounted to £7 10s. 4d. We hope that this year the receipts will be the largest ever recorded, and ask our readers to do whatever they can to make the show a great success. We would remind those who have not seen this year's Pall Mall Exhibition that it closes next week, and that the Benevolent lantern night is as good an opportunity as they can have for seeing both the pictures and a good display of special lantern-slides. The small entrance fee will not be missed by anyone, and even our wives and cousins and aunts may be glad to assist in such a good cause.

Just as we close for press, Dollond and Co. have shown us a monocle or special set of spectacle lenses they are introducing, which include four lenses with special mounting to allow of correction for non-coincidence of foci. We shall give a more detailed description of this next week, but we understand that the price will be about one guinea.

THE Polytechnic Institution, under the direction of Mr. Howard Farmer, offers some sound technical instruction in photography to our readers. The advertisement which appears in another place will show, from the array of talent which has been collected, what may be expected. Such names as Valentine Blanchard for art, Howard Farmer for technique, A. W. Dollond for science, and Wesson, Holzhauson, Whiting, Beeson, and Wolfgang Arnot are pretty good guarantees of the soundness of the instruction. A free introductory lecture will be given on Tuesday, November 8th, and our readers might do far worse than go to hear the same.

Chit-Chat.

MAY I be allowed to congratulate you upon your "Lantern Screen," Mr. Editor? If the "light" is always as "bright" and the screen as "true" as last week, you will have scored an undoubted success.

I WAS looking over the portfolio of "Photographs of the Year" upon the table of the P.S.G.B., and was greatly struck with the high artistic qualities of the pictures. There was another publication somewhat similar in outside appearance upon the table, which I at first took to be yours. I do not want to institute a comparison—but, well, facts speak for themselves.

MR. F. P. CEMBRANO, the genial President of the Richmond Photographic Society, in speaking upon architectural photography before the P.S.G.B., is reported to have said that the best position for the camera was at the height of the eyes from the ground. May I be permitted to ask him whether, when he laid down the rule, he had in contemplation the distance of his own eyes from the ground, or those of Mr. J. B. B. Wellington, for instance!

I KNOW he will not be offended with me for putting the question, and will acquit me of any intention to throw ridicule upon his remarks. The paper was a thoroughly practical one, being the outcome of the experience of one who is a master of his art in that particular direction, and it should be perused by all who are interested in architectural photography.

THE Exhibition question appears to be still a burning one. I do not agree with "A Member of the P.S.G.B.," who suggests the appointment of three artists to get over the "judging" difficulty. I have seen artists judge, and have judged with them, and my experience leads me to the opinion, that, if ignorant of photographic technique, their awards are apt to be, to say the least of it, eccentric.

THOSE who lack the necessary qualifications are, of course, sometimes chosen to officiate as judges, but the unwillingness of exhibitors to submit their work to such would be to some extent overcome were the promoters of exhibitions always to announce upon the entry forms the names of the gentlemen selected. This, I think, should always be done.

IN regard to Pall Mall, it is, it seems to me, the hanging rather than the judging which calls for reform. It is something more than a coincidence that a few well-known exhibitors always get their pictures hung together, whilst "Tom," "Dick," and "Harry" have their exhibits dotted about all over the walls in the most promiscuous fashion possible. I venture to ask for an explanation of this, not, however, in the expectation of obtaining one.

THE Camera Club exhibition may, not inaptly be termed "a harmony in brown," nine-tenths of the exhibits being of that colour, but in very few instances is the tone aimed at—sepia—truly rendered.

THE intention expressed in the catalogue of confining the exhibits to new work has apparently not been adhered to, else how is it that we find such old friends as L. Clark's "Dedham Lock," and "A Portrait," "Highland Smugglers" by Adam Diston, architectural views by F. H. Evans, and several of R. Keen's rather topographical subjects upon the walls? Some of the pictures are of a very impressionist type, notably a something which in the catalogue is designated "A Reed-Fringed Mere," and some pictures by Mr. Eustace Calland, Mr. Maskell, and others, but then, if people will use shaky cameras and bad lenses, they must expect that sort of thing, I suppose. CHATTERBOX.

Letters to the Editor.

THE P. B. A.

SIR,—I thank you for the space you gave for my letter *re* the Benevolent. It may interest you to know that it has caused one case of apparently critical distress, which can be relieved by a temporary loan, to be brought before us. We have given temporary assistance in one or two other cases, and have several cases in our hands of assistants wanting places. One typical case is of an operator and retoucher, who has nearly twenty years' excellent testimonial from one of the best firms of photographers in the country. Over a year ago he emigrated on an engagement, and found to his deep disappointment that the firm to whom he had gone was "no good." He picked up a month's work as a temporary hand, was out of work for a week or two, and then, robbed of everything, including his specimens, worked a passage back to England, and has spent nearly a year answering advertisements and looking for work. No specimens, no good. Is now broken in fortune, and almost broken-spirited, but, hoping against hope, and unwilling to take money from us, or to lay his case before the committee at all. In seeking work he has tramped as much as seventy miles, sheltering at night in coach-houses to husband his last shilling or two, which is rather hard on a man who has mixed with the best of photographic society.

This is one of the cases that ought not to occur if more general interest were taken in the Benevolent, and if photographers wanting assistants would apply to us. Is there any good house near London that will give this gentleman a week's trial even, or a temporary berth? His references are excellent.

We have another case almost as bad, of a really good man who is working, and has been doing so all the summer, at a mere pittance—one of those places with a small salary and large commission (in theory) but little or no commission in practice. We have almost all classes of assistants on the books.—Yours, etc.,

H. SNOWDEN WARD.

* * * *

TONING CHLORIDE PAPER.

SIR,—My experience of Mr. Mason's toning bath is the same as Mr. Linging's. It works well with the Ilford paper, but not so well with the Eastman. The following bath gives me the best results with Eastman paper:—

Borax	40 gr.
Gold chloride	2 ,,
Water	10 oz.

Wash well before toning. Gives a rich brown tone.—I am, yours, etc.,

W. EDWARDS.

MASON'S TONING BATH.

SIR,—I tried this bath as soon as I saw it published, and have found it satisfactory. I use Eastman paper only. I believe that with this paper—probably with all similar papers—the tone of the print, whatever bath is used, depends greatly on the negative, more so than with albumen paper. With a bright negative, clear in the shadows and fairly vigorous, I get a very pleasing warm black with this bath. With some negatives I cannot get beyond a dark brown. I have noticed the *pink* tint to which your correspondent refers. It comes with negatives somewhat blocked up in the shadows. Altogether I think I like this bath better than the combined bath. The sulphocyanide makes the film a little soft. I use a little chrome alum in the hypo bath, and soak the prints in chrome alum during the time of washing.—I am, yours, etc., CLIFFORD E. F. NASH.

* * * *

A UNIVERSAL HAND-CAMERA.

SIR,—In reply to the inquiry in your issue of the 28th October, the sketch of the view-finder referred to was given merely to show the construction of this type of finder.

No dimensions were given, nor was the sketch drawn to scale, for the simple reason that the size of the box depends on the diameter of the lens selected.

The lens should first be obtained and fitted to front of box, and then the rest of the casing added, keeping the lid off until the view has been arranged to correspond with the image thrown by the ordinary lens on the plate.

A suitable diameter for the lens is 1½ in. The focal length (if it can be so called) is immaterial.

All that is necessary is to centre the lens in front of box, fix the mirror at the proper angle, and adjust the aperture in front of the lens so that the size of view coincides with the image on the focussing screen.—I am, yours, etc.,

H. W. B. BRUNO.

* * * *

THE "A. P." LANTERN-SLIDE COMPETITION.

SIR,—The subject of the letter in your issue of the 28th, signed by Messrs Whitman, Williams, and Whiten, is to my mind very important, and I trust you will forgive me for troubling you with these few remarks.

Undoubtedly there are many obscure workers who are ambitious to compete in your monthly and other competitions, not from any wish to become medal hunters, but from an honest wish to have their work judged and to try and improve themselves. How can such, who are mostly beginners, hope to compete with the old hands who have been taking your medals for some years, and whom I should call professionals? Such men as Dresser, Austin, and many more have opportunities to produce work which the ordinary amateur does not possess. I would not grudge them the honours they have most deservedly won or may win in the future, but let them have a class to themselves. I feel sure there are many who will welcome such an arrangement as suggested by the three gentlemen I refer to, and that a championship class be established, in which all who have won a medal should be allowed to compete. The ordinary competition should be open only to those who have *never taken a medal.* As soon as any competitor takes a medal in this competition he should be debarred from competing again in that one, but he could do so in the championship class, which would soon grow into large numbers and be the means of improving the work. I believe that it would be a grand stimulus, for who would not then be proud of saying "I compete in the championship class"?

It seems to me such a simple arrangement, and I am sure the cost of the medals will not be a consideration with you.—I am, etc., H. HARVEY GEORGE.

* * * *

THE CHARITABLE LANTERN ENTERTAINING SOCIETY.

SIR,—The above society, the objects of which are to provide free lantern entertainments to charities and hospitals, has now been formed, and we shall be pleased to receive the names of gentlemen wishing to join.

We shall be grateful for any help, also the gift of any apparatus and slides.—We are, etc.,

B. FOULKES WINES, F. SIMMONS } Secretaries.
Y. M. C. A.,
182, Aldersgate Street, E.C.

AMIDOL.

SIR,—Is it not probable that your own, Mr. Davidson's, and others' experiments on Amidol as a lantern-slide developer may be reconciled into a question purely of exposure?

I have used Amidol in conjunction with ferrocyanide of potassium, bromide of potassium, bromide of ammonium, carbonate of ammonium, and carbonate of soda with the following results:—

1. Amidol in conjunction with carbonate of ammonium does not give brown tones, such as when the latter is used with pyro or hydroquinone.
2. Amidol with ferrocyanide of potassium does not remove the veil from over high lights.
3. Amidol and bromide of potassium will remove the veil.
4. Amidol with ferrocyanide of potassium and bromide of potassium has the same effect as with bromide alone.
5. Amidol and carbonate of soda increase the veil.
6. Compared with a good standard hydroquinone developer, under similar conditions, Amidol veils in high lights.
7. The veiling is due to light getting through the dense parts of negative.
8. The use of bromide consists in removing this slight fog.
9. Exposing two plates a normal time to suit the standard hydroquinone developer, the hydroquinono gives a good clear slide, and Amidol gives a fogged slide.
10. Exposing two plates for one-fifth (a normal time for Amidol), the time required by standard hydroquinone; Amidol gives a good clear slide, quite free from veil, and hydroquinone produces a perfectly useless result.
11. From the above it will be seen that the energetic reducing action of Amidol renders it imperative that every precaution be taken to prevent the action of light through the dense parts of negative.
12. Reducing the exposure, or using bromide, effect the removal of veil, or light fog, the veil not being due to staining action.
13. The developer was made up as follows:—Water, 4 oz.; sulphite of soda, 100 gr.; Amidol, 10 gr. The sulphite of soda must be thoroughly dissolved *before* adding the Amidol.
14. With the above were developed ten quarter-plate negatives, the developer then allowed to stand in uncovered measure for twenty-four hours, seven positives were then made, using same solution, the last (the seventeenth plate) being from a snap shot of such character as would produce a slide having every tendency to veil, if Amidol had a plate-staining action (prolonged development being required to get detail in high lights of positive). I enclose this slide, and would be glad, Sir, if you will say whether there is much sign of veil.

I have recently made some non-tabulated experiments, in which the sulphite is increased to 150 grains and Amidol 15 grains, water remaining the same—4 ounces. This requires a shorter exposure, and gives more density; the colour seems better. For hard negatives the first formula seems the best; for soft negatives the latter. The exposure must be kept back. From results I have seen in some positives since intensified for photo-mechanical use, I am inclined to think under-development, with subsequent intensification, will produce the finest colour in Amidol-developed lantern-slides.—Yours, etc.,

HENRY SUTTON.

[The slide sent is absolutely free from veil.—EDITOR.]

* * * *

EXPOSURE.

SIR,—I notice in a recent report of a society's meeting at Hove, that two members mention that my exposure meter gave them over-exposure (using, I presume, the speed numbers suggested in the instructions).

The following warning, printed in the instructions issued with the instrument, fully explains the reason and remedy:—

"The speed-numbers of plates must be only regarded as approximate, and a guide to the first trial; for in the first place few makes are always issued at the same sensitiveness, and in the second place different workers vary in their method of development and in their idea of what a negative ought to be. The P number may be regarded as the regulator of the instrument, to be set fast or slow according to individual needs.

"*Caution.*—The P numbers given are all calculated for fully-

exposed (not merely pretty) negatives, the developer used having a minimum of alkali. Many good workers, especially those using stronger developers, find that they give over-exposure, and therefore use P numbers one half greater, or even double those suggested."—Yours truly, ALFRED WATKINS.

Apparatus.

MEZZOTYPE PAPER.

THE CARLOTYPE CO., of Rainham, Essex, are preparing the above, which is a rough-surface paper, in two qualities, No. 1 very rough, and No. 2 medium rough. It is printed out just the same as ordinary plain salted paper, that is to say much darker than the finished print is required. The print is then washed thoroughly for fifteen minutes and toned in any ordinary bath diluted—the manufacturers state—with one-third its bulk of water, but we prefer to add at least an equal bulk of water to the ordinary bath. The sulphocyanide toning bath is also recommended, and one that has given very fine tones in our hands is the uranium and gold bath as used for plain paper. Platinum toning is very easy with this paper, and the usual nitric acid and chloroplatinite bath is suggested. For sepia tones, the old sel d'or or hyposulphite of gold bath is suggested, but we much prefer to get these tones with platinum, using for this purpose the following:—

Chloroplatinite of potash	1 gr.
Bitartrate of soda	30 „
Distilled water	10 oz.

The fixing bath should be weakened also for this paper, the makers suggesting 1 to 5, but we find that with a weaker bath namely, 1 to 8, the print loses less in fixing.

This paper lends itself most readily to really artistic effects and many a negative which gives merely a good technical print will on this paper yield a really artistic result, a very striking instance coming to our notice in our Monthly Competition which closed on 24th ult. We hope to have in a week or two a paper upon Platinum toning Mezzotype, the result of a series of experiments which have been carefully carried out.

DURAN'S BACKGROUNDS.

Mr. F. Duran, of 21, Terrace Road, Handsworth, Birmingham, has sent us some photographic prints of some of his artistic backgrounds. They are painted in flatted oils, and are really low in price. One in particular, which is suitable for a bust, is only 7s. 6d., with frame complete. So excellently are these painted that in the prints one hesitates to say whether they are not actual interiors in some cases.

Those of our readers who go in for home portraiture should give these backgrounds a trial. Mr. Duran sends us some portraits taken against his grounds, which enable one to judge very easily what charming results they give.

THIOTONE.

Messrs. G. Wright and Co., of 97, Manchester Road, Hopwood, Lancashire, have introduced a new toning solution, which presumably is intended for a substitute for gold. The print is obtained in the usual way, washed, and fixed in an alkaline hypo bath, then well freed from hypo and immersed in the toning bath, which is composed of two or three parts of Thiotone to 500 parts of water. The special features claimed for this bath are—(1) Its cheapness, the cost being about one-tenth of toning with gold; (2) the great permanency of the print; (3) the rapidity with which the operation is carried out; (4) simplicity of the process, it being only necessary to add a very small quantity of Thiotone to a very large quantity of water to form the toning bath.

We have tried this on chloride, albumenised, and plain paper, and have obtained some very good tones. The ease and simplicity of working are very great, and for these reasons alone it should find many a friend amongst our readers.

NOXINOL.

This preparation, also introduced by the above firm, is intended as a protection to the plate in developing. A stock solution of Noxinol is prepared, and a little of this added to the mixed developer helps to protect the plate from light fog, although, of course, it will not prevent chemical fog.

We have tried this and found that if the negatives developed under this protection are alumed in the ordinary way, the faint red tinge imparted to the gelatine entirely disappears. Many a tyro fogs his plate by too bright a light, and this preparation will help him materially.

IMPROVEMENTS IN THE OPTICAL LANTERN.

Mr. Wm. Rico has submitted to us an extremely ingenious improvement in the lantern which he calls the "Screw Carrier Grip." As is well known, in ordinary lanterns the slide-carrier is usually held in its place by springs. Mr. Rice's improvement consists of fitting to the front tube of the lantern a screw brass collar which can be screwed up tightly, and thus clamps the carrier all round instead of at several points. This improvement is a practical and useful one, and will be warmly welcomed by all lanternists who know of the difficulty of keeping a carrier firmly fixed for registration, etc.

The lantern to which this improvement has been fitted is one specially made for Messrs. Geo. Philip and Son, of Fleet Street, who are now opening up an optical lantern branch in connection with schools and technical institutes. The lantern is very strongly made, the body being stamped out of one sheet of stout iron, and is provided with two side doors with glazed sight holes, and a four-wick lamp or lime jet and tray is provided for the same money. The stage carrying the slide and objective is of solid brass running in solid brass runners, thus preventing any sag, or giving with a heavily mounted objective, and this also allows of accurate adjustment of the slide and objective for the cone of light. The price complete is £4 4s.

A special bamboo stand and table top which exactly fits the side of the lantern box is also to be obtained, and the box is fixed to the table top, forming a support for the lantern, the inside being used for a gas bottle or the stock of slides, etc.

SCHOLZIG'S ENAMEL PAPER.

OTTO SCHOLZIG, of 31, Binfield Road, Clapham, S.W., is now issuing a special paper under the above title, which is neither albumenised nor an emulsion paper, but is coated with a specially hardened salted film which any photographer may sensitise for himself.

Mr. Scholzig kindly sent us some of the paper ready sensitised, and we have given it a trial, and find that whilst it renders every fine detail as faithfully as gelatino-chloride papers it can be toned and fixed in the same manner and in the same baths as the ordinary albumenised paper.

The tones to be obtained are very fine, and to those who wish to sensitise their own paper and obtain one that will not blister it will be a great boon.

The sensitising bath recommended is

Silver nitrate	1 oz.
Distilled water	8 „

Float for two minutes. Obviously this paper will place a new power in the hands of intelligent workers, who may thus sensitise their own paper on strong or weak baths to suit the character of their negatives.

The toning baths suggested are for purple tones

Borax	6 drm.
Chloride of gold	6 gr.
Distilled water	2 pints

For black tones

Ammonium sulphocyanide	6 drm.
Chloride of gold	6 gr.
Distilled water	2 pints

For fixing

Hypo	3 oz.
Water	1 pint.

Immerse for ten minutes and keep moving.

TOMES' NEGATIVE BOX.

Mr. Alfred Tomes, of 43, Bedford Street, Leamington Spa, has placed on the market a very useful and well made negative box constructed to hold fifty plates. It is provided in the lid with a numbered register for recording the negatives stored, and is just the thing required by the busy man with scores of negatives, or the neat and tidy worker desirous of seeing his dark-room tidy, and those who are neither busy nor tidy must perforce buy one to be up with the times.

W. WATSON & SONS, 313, HIGH HOLBORN, LONDON,

HAVE RECENTLY BEEN AWARDED

At the AMSTERDAM PHOTO EXHIBITION, 1891—THE MEDAL OF THE SOCIETY

At the GLASGOW PHOTO EXHIBITION, 1891—THE MEDAL OF THE SOCIETY.

At the ANTWERP INTERNATIONAL MICROSCOPIC EXHIBITION, 1891—TWO DIPLOMAS OF HONOUR (Degree above Gold Medals).

At BUDAPESTH—THE GOLD MEDAL OF THE PHOTOGRAPHIC SOCIETY.

Making 27 awards for the excellence of their Instruments, including Paris Universal Exhibition, 1889 (2 Gold), London, Liverpool Melbourne, etc.

W. WATSON & SONS believe they are the largest Manufacturers of High-class Photographic Instruments in Europe and intending Purchasers can be allowed at any time to inspect their Steam Factories, which are close to their Warehouse, and judge for themselves as to the quality of Material used and the care bestowed on the Manufacture of their Goods, which W. & S. are confident is elsewhere unequalled. *Testimonials as to the efficiency of their Instruments are received almost daily.*

Watson's "Acme" Camera.
Unsurpassed for Outdoor use.

Watson's "Premier" Cameras.
For Professional use, *Indoor or Out.*

Watson's Studio Cameras, Tripods, Enlarging Lanterns, etc.

Sensitized Albumenized Paper.
The Best White or Rose. Per quire, 13s.; half quire, 6s. 6d.; quarter quire, 3s. 6d. Single sheet, 10d., post free.

Watson's "Detective" Hand Camera.

Watson's Rapid Rectilinear Lenses.

Watson's Wide Angle and Single Landscape Lenses.

All Cameras and Lenses may now, at an advanced cost, have the Metal parts made in Aluminium.

Sensitized Matt-Surface Paper.
Exceedingly popular. Yields most artistic results. Per quire, 13s half quire, 6s. 6d.; quarter quire, 3s. 6d. Single sheet, 10d., post free

AN ILLUSTRATED CATALOGUE OF CAMERAS, LENSES, AND APPARATUS SENT FREE TO ANY ADDRESS ON APPLICATION. Established 1837.

— AND AT MELBOURNE, AUSTRALIA—251, SWANSTON STREET. —

STEAM FACTORIES: 9, 10, 11, 16, and 17, FULWOOD'S RENTS, HOLBORN.

Wratten & Wainwright's
CELEBRATED
"LONDON" PLATES,

"ORDINARY" (15°). For Landscapes, Copying, and Transparencies.

"INSTANTANEOUS" (19°). For Studio and General Work.

"DROP-SHUTTER SPECIAL (24°). For Dull Weather and Hand Cameras. The most rapid Plate made.

Have been manufactured continuously for fifteen years, and have never yet been approached in quality. They are recognised by the most competent authorities as the standard by which all other Plates are judged. These Plates are indispensable for the production of Exhibition Pictures. More High Class Medals have been secured by results on the "London" Plates than all others combined.

Wratten & Wainwright's
SENSITIZED PAPER

HAS THE LARGEST SALE AND HIGHEST REPUTATION, KEEPS WELL, TONES EASILY, AND **DOES NOT BLISTER.**

Post Free—per Quire, 13/6; Half-quire, 7/-; Quarter-quire, 4/-; 3 Sheets, 2/3; Sample Sheet 10d.
Cut Sizes, 1/- per Quire extra.

APPARATUS, CHEMICALS, ETC., OF THE BEST QUALITY ONLY, AT LOWEST MARKET PRICES.
Catalogues and Estimates Free.

WRATTEN & WAINWRIGHT, 38, Great Queen Street, Long Acre, London, W.C

TELEPHONE No. 2776. TELEGRAPHIC ADDRESS: "WRATTEN, LONDON."

THE MEDAL

OF THE PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN

HAS BEEN AWARDED TO

ELLIOTT & SON'S

MAGNIFICENT ENLARGEMENT, ENTITLED—

"BREAK, BREAK, BREAK, AT THE FOOT OF THY CRAGS, O SEA!"

OPINIONS OF THE PRESS.

DAILY CHRONICLE.

The work which will command most attention, no less for its beauty than its size, is a carbon enlargement, exhibited by Messrs. Elliott & Son, from a negative by Mr. Birt Acres. The picture, which measures 7 ft. by 5 ft., is a fine study of the surf breaking upon a rockbound coast. *A greenish tint has been given to it, which heightens the realism*, and there is none of that blur which so often obtrudes itself upon photographic seascapes."

PHOTOGRAPHIC NEWS.

"We now come to the largest picture in the gallery, No. 250 entitled— 'Break, break, break,
At the foot of thy crags, oh sea!'
This is a carbon enlargement, measuring no less than 7ft. by 5 ft. without its frame, by Messrs. Elliott & Son, of Barnet. It is certainly one of the finest pictures of the kind ever produced. The picture represents a rough sea breaking on a rocky shore, and is not too sharp to do away with all notion of movement. It is not a frozen sea, as a photographic sea too often is, but is full of life and movement. It seems indeed to be rolling in towards the spectator as he looks at the picture. It is worth the trouble of going to Pall Mall to see this one fine example of photographic art. It takes a medal."

STANDARD.

"It is a remarkable work, even less on account of its size than of its artistic merits as a presentation of the broken waters and lights of the sea."

BRITISH JOURNAL OF PHOTOGRAPHY.

"It is, without doubt, a majestic work. From a placid sea the white crested waves tumble in upon ridges of ugly jagged rocks in the foreground, the seething, surging waters almost sounding in one's ears. *The particular pigment employed adds to the fine effect of the study*, which, in addition of its artistic value, is a splendid specimen of carbon work."

Amateurs can obtain our Enlargements through any Dealer or Professional Photographer.

Manufacturers of the well-known **BARNET AND STUDIO PLATES.**

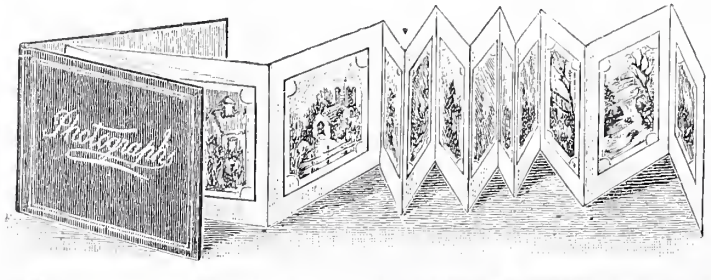
Works: BARNET, HERTS.

W. WRAY, MANUFACTURER OF PHOTOGRAPHIC LENSES.

PRICE LIST FREE.

Illustrated Catalogue of Telescopes, Microscopes, etc., for stamp.

NORTH HILL, HIGHGATE, LONDON, N.



PERCY LUND & CO.'S

PANORAMIC ALBUMS.

Suitable for the pocket. Specially recommended for a Series of Views of any particular district. Admirably adapted for chloride or aristotype prints. No mounting required. Will hold 12 photographs at sight, and can be used for storing others by putting several on each page.

Quarter Plate, 6d.; Half Plate, 1s.; Whole Plate, 2s.

OF ALL DEALERS.

PERCY LUND & CO., Memorial Hall, LONDON
and 16, 18, & 20, St. John Street, BRADFORD.

IF YOU **WANT** RESULTS
OF THE HIGHEST ARTISTIC EXCELLENCE,

USE **DURAN'S BACKGROUNDS.** THEY ARE ACKNOWLEDGED TO BE THE FINEST ON THE MARKET TO-DAY.

For a high-class effect in Bust Pictures, try one of Duran's Rembrandt Cloud Grounds. On Canvas, 48 by 40, 7s. 6d., in Flatted Oil, on Frame Complete.

FRANCESCO DURAN, Medallist, Paris and Vienna Studios, 21, Terrace Road, HANDSWORTH, BIRMINGHAM.

PLEASE MENTION THIS PAPER.

Study and Practice of Art in Field Photography.—X.

By A. Horsley Hinton.

(*Continued from page* 143.)

In the last chapter we made a passing reference to the subjects of "Tone" and "Aerial Perspective," and will now devote a little more time to these most important matters.

Although since the advance of artistic photography the two terms above used have been frequently written about and discussed, it is probable that a goodly number of our readers are still comparatively ignorant of their real meaning. Unfortunately, amongst photographers "tone" is a word likely to be a great deal misunderstood, in consequence of its being almost universally employed for "colour," in connection with those printing processes in which the original colour of the print is changed or modified by subsequent chemical action, this process being described as "toning." In the sense in which the painter-artist uses the word, however, "tone" is a matter of far greater importance. Upon the correctness of tone depend the picture's beauty and truthfulness. With false tonality the most pleasing arrangement and admirable drawing are useless, but let the relative tones of the various parts of the picture be true, and the simplest subjects may be elevated from the commonplace and become infused with a poetry and sentiment essential to good art.

Mr. Francis Bate, in his excellent little book "The Naturalistic School of Painting," gives us the following definition:—"Tone signifies the amount of light received by the divers planes of divers objects; and 'relative tone' the difference in amount of light received by these different planes in comparison with and relation to each other." The word "tone," then, is applied to the whole subject; "relative tone" is used when speaking of parts in comparison. In other words, we mean the lightness and darkness of things and the difference between the light and the shade. The light and the shade have a relative value one to another, and hence some painters speak of relative tones as "values." If the shadow part of an object be ten times darker than the lighted portion, then in the picture the relative tones of these two portions must be in the value of ten to one, and if the green grass field be so many times darker than the dusty footpath crossing it, then in the picture the relative "value," the proportional darkness and lightness of the green and the dust colour, must be carefully observed, so we shall say the "relative tones" are correctly rendered.

It will be seen then that relative tone will depend upon the amount of light falling upon the surfaces of things, imparting varying degrees between the extremes of high light and deep shadow. There is, however, another circumstance which will influence the relative light value of objects, and that is the presence of an intervening film of atmosphere, which if present to any great degree we call haze or mist.

The representation of this character in a landscape gives the impression of distance, and is what is called "aerial perspective." But if we remember that the presence of this atmospheric haze is only perceptible in proportion as the light (and its own density) makes it visible, it will be difficult to separate its consideration apart from the general question of "tone."

The vital importance of a careful study of tones or values in nature to a student of any picture-making art cannot be over-estimated. It is, however, a difficult subject to illustrate or to teach, and a proper knowledge of it must depend almost entirely upon the student's own persistent observation, and we would strongly recommend our readers to read the little book above referred to.*

But in pursuing the subject of "tone" in its more general sense, and as applied to the entire subject, we must get deeply rooted in our mind the knowledge of how exceedingly *light* nature is, and how far, how very far, below nature's standard our most brilliant pictures must necessarily be.

In our pictures (photographs) the highest expression of light is white paper; but as we hold the photograph in our hands compare its whitest portion with a lump of chalk or a piece of white paper lying out in the sunlight, and then again compare this latter with the glinting sunlight on the ripples of water or on the surfaces of shiny or wet leaves and grasses. Sunlight has been scientifically ascertained to be many thousands of times lighter than purest white pigment, and hence artists have come to acknowledge that it is impossible to imitate or to portray the lightness of sunlight, and must be content to use such skill as shall in some manner *suggest* what cannot be depicted.

But if we are limited in our ascent to the higher, there is no curtailment of our powers with regard to the lower tones in the light scale, and hence the safest maxim will be to represent the darks of the deepest shadows correctly, and the shades next lighter and so upwards in the scale until we reach the natural limitations, beyond which the artist is powerless to proceed. By such a method some portion of our work at least will be truthful, and with so much success we must be satisfied.

It is, however, strangely enough, in just that very part, in just those tones where the photographer may be successful, that the greatest errors have been committed. Photographs are nearly always too dark; there is not one in a thousand but which, in representing shadows out of doors, goes far too low in the scale, and so lowers the tone of the whole. If we take an average photographic print of an open landscape in summer sunshine, and compare it with a scene in nature under similar conditions, what do we find? Such portions of trees and undergrowth which chance to be in shadow are deep green or grey, brown, and blue. Hold up a black coat sleeve so as to bring it against these darker regions, and we shall find they are whole volumes lighter than black, and yet in the photograph they are represented oftentimes by the jetty blackness of a platinum deposit. The shadows under clumps of foreground plants, and tufts of grass in nature are far removed from *black*, which is synonymous for *total absence of light*. Nature's deepest shadows are full of light, suffused with a magic luminousness composed of many varying tones, putting to shame the solid opacity of our copies.

Except in rare cases of local colouring, there is no such thing as black in the landscape, for even a freshly painted black barn or a boat with its heavily tarred sides reflects from the surrounding objects, from the grass fields or the water, and from the sky above, so much light that it is far from black, but full of subtle gradations of greys. How then must it be with trees and hedges, shady banks and still reflections? And how is it in our photographs? We have before us a good and admired photograph, say, of a fishing boat. The dark tanned sails are so nearly black that it is hard for the black hull to come blacker, and in the eddying ripples which pursue each other in its wake there are deep reflections interspersed with hard crisp lines and spaces of an ebony hue. Is such an one a true representation of all the wonderful translucence of the sea or river, or of the strange light which is reflected on to the boat's sides, and the swelling folds of canvas sails? And worse libel

* "The Naturalistic School of Painting." By Francis Bate. Published by W. Reeves, 185, Fleet Street, London.

is perhaps found in a picture of some corner of our favourite marsh. The hollows slowly worn in the overhanging bank, the narrow recessos in the long walls of rushes where the sunlight passes over, the tiny pools in the soft mud under the canopy of broad dock leaves, are all photographed *black*, as though the world were not filled with the sun's penetrating radiance. Mr. Francis Bate puts this very simply. He is speaking, of course, of paintings, but the lesson may be ours. He says: "It is lighter always in the open air than in the lightest room. Looking up from within a room to the window, all without is light. That is our first impression (no matter how light may be the room or how dull the day) before we realise the character of the scene we look upon. The window-sash is a frame to the scene—a picture seen through its opening—a frame as it were, suspended upon the wall of the room, and holding a picture lighter than the wall." Speaking of pictures themselves, he says: "It should seem as if through an opening in the wall one saw the scene depicted; as though one could breathe in through it the air, and the freshness of things unconfined."

We make no apology for so lengthy an excerpt, in which this important matter is so clearly put. It is this gospel of light which photographers have been so slow to accept. Composition, definition, and other kindred principles have been taken up, studied, and acted upon, but how few photographic pictures show evidence of the artist having realised and appreciated the lightness of outdoor scenes; and, alas! when some advance in this direction is made, we too often find public opinion describes it as "weak," "washy," "flat," and the like.



"LOWLAND SOLITUDES."

Now the artist's error in this matter arises no doubt from prejudice; that is, he has grown up amongst dark pictures, and has unconsciously come to consider such pictures as true, and so involuntarily imitates and falls into the traditional groove, so that what we have to do is to cultivate for ourselves a right appreciation of the value or tone of nature out of doors, and irrespective of what others may have done or what others may say make our pictures *true* to *our own* impressions of nature.

As has been already said, it is physically impossible to make our high lights as bright as those in nature; the means at our disposal are at fault, and we must accept the inevitable. But it will be our own blame if we have our shadows and half-tones wrong; so that it is here we should seek improvement.

Let the idea of the lightness of things be once securely established in our fancy, and it will so influence our work that we shall unconsciously modify many of our methods, and an alteration will be observable in our results.

Carry these remarks in your mind into the fields and apply them, observe for yourself, and it may be that some surprise will be experienced on finding how few and how very restricted are the portions of the scene which are anything like as black or as dark as you may have imagined them, or as they are usually represented. So far then, for the present, as to the general tone of the picture; and much the same may be said of the "relative tones" of the several parts. It is not sufficient that the negative was rightly exposed, developed, and printed, because no amount of colour correction will always induce the sensitive plate to register the various parts of the scene in correct relation, and it is therefore the development, or more especially in the printing, that correction of the errors must be attempted. But the difficulty which at once arises is that unless we have previously very carefully studied the scene in nature under the precise conditions prevailing when the negative was exposed, and made a very complete mental or written record for reference, we shall not know wherein the negative errs, or what it is, if anything, that needs correction, and what the result is which the negative has failed to attain. This knowledge is to be acquired—and only to be acquired—by individual and persistent observation; keep the matter always in mind, ask yourself on every possible occasion when out of doors, whether in town or country, which is the deepest dark and which are the highest lights before you, and fill up the intermediate gradations in a general manner, and by this means the eye may become so trained that when a picture, of whatsoever character, be laid before you you will at once instinctively know whether the relative tones of the various planes are correct, and point out in what manner the faults might be remedied.

In such a subject as the present, rules, examples, instructions, illustrations are utterly futile; it can only be understood by careful observation. In a general way darks are darker and lights lighter in proportion as they are nearer to the spectator; that is, as they approach the immediate foreground, light objects are lowered in tone, and shadows grow greyer as they recede and become further removed. But this principle is often misunderstood, and strongly contrasted blacks and whites are depended upon to give strength and nearness to the foreground. A little study of Nature, however, will show us that foregrounds are often deficient in either extremes, and that strength is as often suggested by judicious contrasting of broad half-tones as by violently opposed black and white.

We have here the accompanying reproduction of a landscape subject which is fairly successful in suggesting the gradually receding planes, but the great mass of shadow is not in the foreground, the strength of which is derived from the body of light on the water, and the contrast obtained by the darker lines of the reeds which transect it; quite fine lines are these, and not very dark, yet the transition from the light water to the darker reed stalks is greater and more sudden than found in any other adjacent objects in the picture; thus, as it were, the sum total of all

the contrasts in the foreground would far out-weigh in volume the contrasts in the middle distance or that of the more remote distance.

Note too how often foliage or leafless trees in winter and spring come out so very darkly in our average photographs, and the consequence is that they appear nearer, closer to the eye, than the nearest foreground. The shadow of such portions is often exaggerated, but the fault may often be found from the sky which they touch, and with which they contrast, being too light, and a very strong sudden contrast is thus established; but lower the tone of the sky or introduce some heavier clouds, and the obtrusive dark trees will be found to have acquired a more distant appearance. The tone of the extreme distance and the sky which it meets are, except under special circumstances, very near to each other and an idea of remoteness is given. This brings us to the subject of skies, and clouds in their relation (as regards tone) to the landscape, and is a matter of sufficient importance to command a separate chapter.

Catalogues.

GEO. R. TWEEDIE, of 54, Hawley Square, Margate.

This gentleman sends us his price list of lantern slides and readings for hire. The subjects are "Life and Works of Oliver Goldsmith," "Ghosts," "Witches," "Fortune Telling," etc.

VEVERS' Second-hand and Job Lot List.

Mr. C. C. Vevers, of 12, Market Street, Briggate, Leeds, sends us his October list of second-hand goods, amongst which we notice some good bargains well worth attention.

SUPPLEMENTARY LIST OF OPTICAL LANTERN SLIDES.

MR. ALFRED UNDERHILL, of 32, Clarendon Road, W. Croydon, has sent us the above, which includes some new and interesting sets, such as "The Life and Work of the late C. H. Spurgeon," "Life in the British Army," "P. and O. Pencillings," etc. Mr. Underhill also goes in for designing, drawing, and colouring lantern slides of all descriptions.

MR. ANDREW H. BAIRD, of 15, Lothian Street, Edinburgh, has some lantern specialities which are of great interest and usefulness. Looking through his lantern catalogue we note he stocks lanterns and lantern requisites of all kinds. A wall-map pattern screen on roller and lath, which has one side white and the other black will commend itself not only to lanternists but physicists also. Another useful idea of Mr. Baird is that of supplying very fine ground-glass which may be drawn on with ordinary pen or pencil, and can then be rendered transparent. Special slide colours in collapsible tubes and neat tin box are also catalogued, and the "improved" combined mask and binder will save many a lot of trouble. The Lothian etching plates are also prepared in blue or brown in lantern size, and are coated with a medium which can easily be scraped off with a sharp point, leaving clear white lines on the coloured ground.

MR. W. C. HUGHES, of 82, Mortimer Road, Kingsland Road, has edited a new catalogue of 140 pages, well printed and illustrated, and which contains novelties and requisites of all kinds for the lantern season. The simplest and the most elaborate lanterns are to be found from the humble single iron at 27s. 6d. to the stately three-decker at £100. Slides of every description, stands, screens, etc., are all to be found priced and illustrated.

Warrington.—The usual monthly meeting was held on 25th ult, there being a large number of members present. Mr. H. N. Houghton gave a practical demonstration on "Negative Enlarging." Two examples were given, viz, from 3¼ by 3¼ to 10 by 8, with excellent results. He also demonstrated lantern-slide making developed with "Amidol." Mr. Wm. Lawson, of Newton-le-Willows, also introduced to the meeting his improved limelight saturator made to fit into any lantern; it certainly excels the ordinary blow-through jet, yielding a beautiful steady light, and apart from the advantages in the lantern it would make a splendid outside illumination for business purposes. The following gentlemen were elected members of the Society: Mr. Vernon, Mr. David Stone, and Captain Molyneux Seel.

Working with Spectacle Lenses.

Now that Mr. J. E. Austin has been so successful with his portraits taken with a spectacle lens, doubtless many of our readers will be anxious to try the same, and for their benefit we translate two papers which have lately appeared in the *Photographische Rundschau*, the organ of the Club der Amateur Photographen in Wien, which is one of the most influential clubs in the world, and possibly possesses the best journal.

Professor Hans Watzek says that for our work the monocle (as he calls it) is a circular convex eye-glass of about 4 cm. (=1½ in.) diameter. The monocle has, like all uncorrected lenses, two foci—the one the visual, that is, the focus for the brilliant (yellow) rays; and the chemical, which is the focus of the actinic (violet) rays. With the eye we focus the sharp image on the ground-glass always at the visual focus; a dry plate only gives a sharp negative when the image has been focussed for the chemical focus. The distance of the visual to the chemical focus is called the difference of focus.

If it is desired to obtain as sharp a negative as possible with the monocle, one has to focus the image on the ground-glass very sharp, and then rack the dark-slide in towards the lens to the amount of the difference of foci. The difference of focus in the convex glasses used amounted to ⅛ cm. (=¼ in.) with a camera extension of 5 cm. (= 2 in.), ⅜ cm. (= ½ in.), with 10 cm. (= 4 in.), ⅝ for 15 cm., and so on; thus in every case $\frac{1}{25}$ of the camera extension.

The monocle only gives an image of such a degree of sharpness as corresponds with ordinary requirements when stopped down to *f*/20. With sunlit landscapes the stopping down may be as far as *f*/100. The more a monocle is stopped down the greater is the sharpness of definition, but it never attains that of achromatised lenses. If the diameter of the stop is 1 mm. or under, the image suffered in sharpness by the appearance of the phenomenon of interference. Landscapes which were prepared in this way were very much like those made with a pinhole, but were not so fuzzy.

If the distance of any object from the lens is 100 times the focus of the lens, the ground-glass must be placed at the focus of the lens, and the image is 1-100th of the natural size. If the size of the image is the same as the object, then the distance between the lens and object and the lens and ground-glass are equal, and this distance is double the focus of lens. In fact, the ordinary law which applies to correeted lenses applies to the monocle. The time of exposure is dependent, all other things being equal, entirely upon the *f*/*x* ratio of the diaphragm. Heads of one-third natural size were taken with a monocle of 20 cm. (= 8 ins) focus, and 6 mm., =*f*/33, aperture, in diffused daylight, in 2 seconds.

In order to reduce the time of exposure as much as possible, the most sensitive plates were pre-exposed under eight thicknesses of tissue paper in the camera for the same time as the real exposure, and the time of exposure thus reduced to one-third. Technically, excellent results have been obtained of life and three-quarter life size with a monocle of 150 c.cm. (= 59 in.) with a relative aperture of *f*/40.

Prof. Watzek's paper is necessarily condensed, but the above forms the leading and most instructive features in it.

Herr Anton M. Haschek, who we regret to note died on September 9th at the early age of twenty-five, contributed the following paper upon the non-coincidence of foci, which is valuable and useful to those desiring to work with a spectacle lens.

The simple formula for the focus of a lens is:

$$\frac{1}{f} = \left(n - 1\right)\left(\frac{1}{r_1} - \frac{1}{r_2}\right),$$

in which

f = the focus.

r_1, r_2, the radii of curvative of the lenses in the direction of the incident rays.

n = the refractive co-efficient of the glass from which the lens is made.

White daylight is, however, as is well known, composed of coloured lights, into which it can be decomposed by the aid of a prism. By this means a solar spectrum is formed with the colours red, orange, yellow, green, indigo, and violet, of which the first are distinguished by their intensity to the eye, and the later for their chemical activity. The cause of the decomposition of white light is the different refraction of the colours as they pass through glass. Every colour has its own particular co-efficient of refraction. In photography this circumstance is particularly noticeable in an unpleasant manner. For whilst we focus with the visually active colours, red, yellow, and green, the blue and violet rays, which are scarcely recognised by the eye, act much more energetically upon the plate, and produce, as is generally known, a very troublesome indistinctness.

Briefly summarising the above, we arrive at the following conclusions:—The chemically active rays have a higher index of refraction than the visual. If we assign, therefore, in the above

formula a greater value for n, we obtain for convex lenses a smaller value for f. Thus the chemical focus lies nearer the objective than the visual focus. In order to obtain a sharp image, therefore, when using a simple lens, rack in the focussing screen about this amount towards the objective.

In order to estimate this amount, we will call ng the index of refraction for yellow and nv that for violet light. By this we obtain as the focus for yellow light fg.

$$\frac{1}{fg} = \left(ng - 1\right)\left(\frac{1}{r_1} - \frac{1}{r_2}\right)$$

or

$$fg = \frac{1}{1\,ng - 1} \cdot \frac{r_1\ r_2}{r_2 - r_1}$$

and for violet light fv

$$fv = \frac{1}{nv - 1} \cdot \frac{r_1\ r_2}{r_2 - r_1}.$$

The difference of focus is estimated by subtraction of the two equations:—

$$fg - fv = \left(\frac{1}{ng - 1} - \frac{1}{nv - 1}\right)\frac{r_1\ r_2}{r_2 - r_1} = \frac{nv - ng}{(ng - 1)\,(nv - 1)} \cdot \frac{r_1\ r_2}{r_2 - r_1}$$

We can bring these values into a simpler form if we arrange the formula as follows:—

$$fg - fv = \frac{nv - ng}{nv - 1} \cdot \frac{1}{ng - 1} \cdot \frac{r_1\ r_2}{r_2 - r_1}$$

and for

$$\frac{1}{ng - 1} \cdot \frac{r_1\ r_2}{r_2 - r_1}$$

introduce the value of fg, found above. By this means the equation becomes:—

$$fg - fv = \frac{nv - ng}{nv - 1} \cdot fg.$$

We may replace the value $\frac{nv - ng}{nv - 1}$ without introducing any serious error by $\frac{\Delta\, n}{n - 1}$, the expression of the dispersion used, by which means the reckoning is much simplified. Roughly the value for—

$$\frac{\Delta\, n}{n - 1} = 0{\cdot}02.$$

Therefore the difference of foci, which we will designate by Δf, is estimated by the equation,

$$\Delta\, f = f\,0{\cdot}02.$$

We thus obtain very simply for ordinary landscape work, with satisfactory accuracy, the difference of foci, if we focus by the visual rays, measure the distance between the lens and focussing-screen, and multiply this by 0·02. Thus for a lens of 100 mm. (=4 in.) the difference of foci is 100·0·02 mm.=2 m. ($\frac{1}{12}$ in.), for a lens of 250 mm. (=10 in.), 250·0·02=5 mm. (=$\frac{1}{6}$ in.), and so on.

The formula thus obtained for the estimation of the difference of foci only applies, however, when the object is at infinity or a great distance, as in landscape work. The question which now naturally occurs is what is the ratio of the difference of foci to the equivalent focus when we have lengthened the working focus considerably, as, for instance, in portraiture, such as lately the monocle has been used for?

In order to clear up this relation we utilise the formula:—

$$\frac{1}{g} + \frac{1}{b} = \frac{1}{f}$$

in which the size of the object g may be considered constant, and reckon the focus f the size of image b for yellow and blue rays. We thus find that if we distinguish the ratio for yellow by the index g, and that for blue by b:—

For yellow rays, $\frac{1}{g} + \frac{1}{b_g} = \frac{1}{f_g}$,

For blue rays, $\frac{1}{g} + \frac{1}{b_b} = \frac{1}{f_b}$,

and from this by substraction,

$$\frac{1}{b_g} - \frac{1}{b_b} = \frac{1}{f_g} - \frac{1}{f}, \quad \text{or} \quad \frac{b_b - b_g}{b_g \cdot b_b} = \frac{f_b - f_g}{f_g \cdot f_b},$$

in this formula we may replace the products $b_g = b_b$ by b^2, and $f_g f_b$ by f^2. $F_b - f_g$ is the difference of foci with an object at a great distance, and according to the foregoing calculations it $= f\,0{\cdot}02$, $b_g - b_b$ is the difference of foci, which we distinguish by $\Delta\, b$. We find the same therefore expressed by the formula:—

$$\Delta\, b = \frac{b^2 f 0{\cdot}02}{f^2} \quad \frac{b^2 0{\cdot}02}{f}$$

We see from this that the difference of foci when working at close quarters is directly proportional to the square of the size of the image, and inversely to the focus. Since, however, in this instance the calculation is considerably more difficult, it is preferable to use the following table of the difference of foci with various distances between lens and focussing screen.

This contains the foci f from 100 to 1,000 mm. (4 in. to 39½ in.), and under each one the corresponding difference of foci exact to $\frac{1}{10}$ mm. In the horizontal rows is given the proportion between the image and object from $\frac{1}{10}$ to $\frac{1}{10}$, and underneath the corresponding difference of foci. Thus one finds with a monocle of 250 mm. (=10 in.) with an extension of camera of 400 mm. (=15¾ in.) [proportion of image to object as 6 : 10] the difference of foci =12·8 mm. (=½ in.) A lens of 1 metre (=39½ in.) has when taking objects life size (proportion of image to object 10 : 10) a difference of foci of 80·0 mm (=3⅛ in.) In taking portraits of half life size (proportion (of image to object 5 : 10) the extension of camera is 1,500 mm =57½ in.), the difference of focus is 45 mm. (=1¾ in.)

In order to test practically also the accuracy of the calculations, a number of concave convex, or so-called periscopic lenses were placed in the mount of a landscape lens, and reproductions were made without correction and with correction of varying amount. As the object a line drawing with black lines on white ground was chosen. As the smallest diaphragm a diameter of 5 mm. was chosen. The negatives taken with the correction made showed an unexpected sharpness.

As a second test, portraits measuring 40 × 50 cm. (=16 × 20 in.) of ⅜ natural size were made with a lens of 650 mm. (=25½in.). As with this, however, too much light was lost, the diaphragm was removed altogether, the exposure made with full aperture, by which means the time of exposure was reduced to ⅛ of that with a diaphragm. These negatives also showed a good and equal sharpness over the whole of the picture. Very excellent is, however, the softness and modulation, and even it may be said that it could not be obtained with the best portrait lenses. It is worth anyone's while to try this experiment, not only on account of the fine results, but also on account of the moderate outlay for the lenses, of which any amateur can buy a dozen or so.

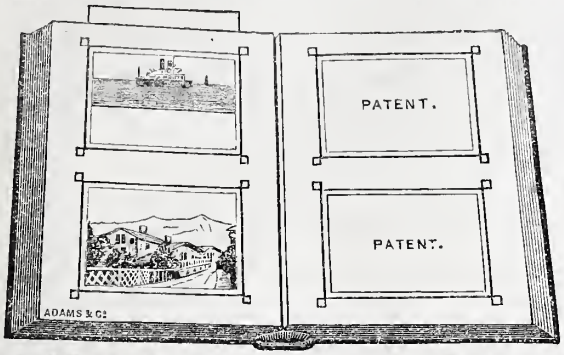
TABLE SHOWING THE CORRECTION FOR ACTINIC FOCI WITH MONOCLES OR SPECTACLE LENSES.

PROPORTION BETWEEN IMAGE AND OBJECT.

	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	10/10
f 100	110	120	130	140	150	160	170	180	190	200
Δf 2	2·4	2·9	3·4	3·9	4·5	5·1	5·8	6·8	7·2	8·0
f 150	165	180	195	210	225	240	255	270	285	300
Δf 3	3·6	4·3	5·1	5·9	6·8	7·7	8·7	9·7	10·8	12·0
f 200	220	240	260	280	300	320	340	360	380	400
Δf 4	4·8	5·8	6·8	7·8	9·0	10·2	11·6	13·0	14·4	16·0
f 250	275	300	325	350	375	400	425	450	475	500
Δf 5	6·1	7·2	8·5	9·8	11·3	12·8	14·5	16·2	18·1	20·0
f 300	330	360	390	420	450	480	510	540	570	600
Δf 6	7·3	8·6	10·1	11·7	13·5	15·4	17·3	19·4	21·7	24·0
f 350	385	420	455	490	525	560	595	630	665	700
Δf 7	8·5	10·1	11·8	13·7	15·8	17·9	20·2	22·7	25·3	28·0
f 400	440	480	520	560	600	640	680	720	760	800
Δf 8	9·7	11·5	13·6	15·7	18·0	20·5	23·1	25·9	28·9	32·0
f 450	495	540	585	630	675	720	765	810	855	900
Δf 9	10·9	13·0	15·2	17·7	20·3	23·0	26·0	29·2	32·7	36·0
f 500	550	600	650	700	750	800	850	900	950	1,000
Δf 10	12·1	14·4	16·9	19·6	22·5	25·6	28·9	32·4	36·1	40·0

ADAMS & CO.'S 1892 ANNUAL NOW READY.

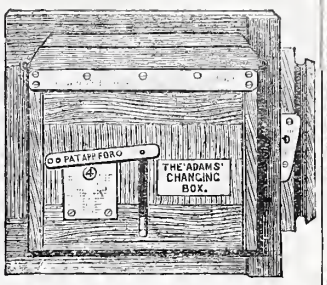
Circulates over the whole world, contains particulars of dozens of absolute novelties, and is the most complete record of photographic progress ever published. Produced at a cost of Two SHILLINGS per copy. **PRICE SIXPENCE.** Post free, ONE SHILLING. 400 pages and 500 Illustrations.



ADAMS & CO.'S CLUB ALBUM.

Prints removed and re arranged at will. No mounting required. Perfect for emulsion papers, as they keep their surface. Handsomely and strongly bound, with gold edges. No. 1, for 48 ¼ plate prints, one on page, **3s. 6d.**, post free **3s. 10½d.** No. 2 takes 96, two on a page, **5/6**, postage 6d. No. 3 takes 192, four on a page, **10/6**, postage 9d. No. 4 takes 48 5 by 4 prints, one on a page, **4s. 6d.**, postage 6d. No. 5 takes 48 ½ plates, one on a page, **5s. 6d.**, postage 6d. No. 6 takes 43 1/1 plates, one on a page, **10s. 6d.**, postage 9d. All prices Net.

The 'Adams' Changing Box.



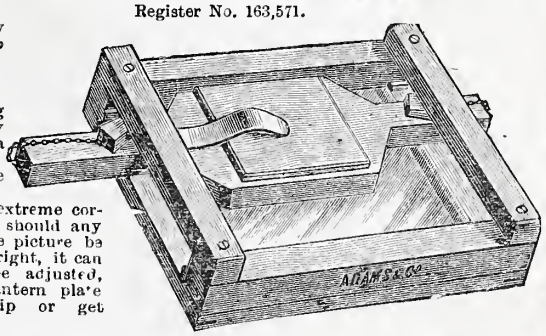
Holds 12 plates, and can be fitted to any Camera. Full particulars in 1892 Annual. ¼, 5 by 4, and ½ plate. Now READY. Takes either plates or films.

ADAMS & CO.'S REGISTERED LANTERN SLIDE FRAME

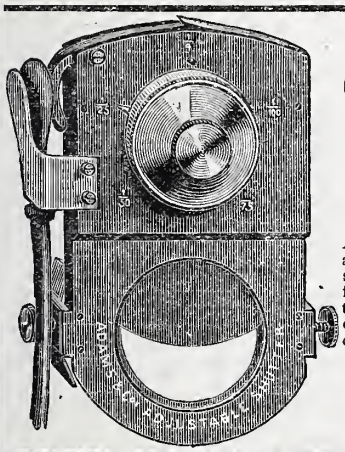
Register No. 163,571.

Takes any size up to 1/1 plate.

By using this any part of a negative may be selected, even the extreme corners; and, should any part of the picture be out of upright, it can at once be adjusted, and the lantern plate cannot slip or get scratched.



Price **3s. 6d.**, postage 6d. ½ and ¼ carriers, 6d. the two.

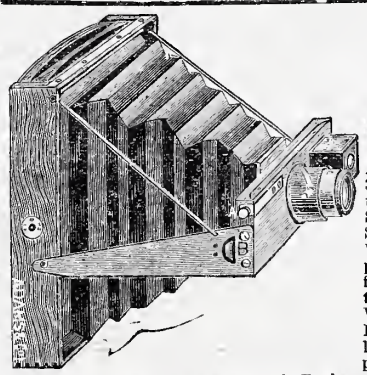


ADAMS & CO.'S 'ADJUSTABLE' SHUTTER.

NO FITTING REQUIRED.

A ¼-pl. fits any ¼-pl Lens; a ½-pl. any ½-pl., and so on. Extremely small and light, works at set speed from ⅛ to 1/100 of a second: also time exposure. Gives the necessary extra exposure to foreground. One of the best and simplest of Shutters, as well as cheapest.

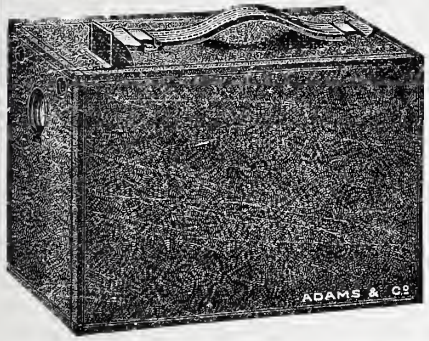
¼ pl. complete	...	17/-
½-pl. ,,	...	21/-
1/1-pl. ,,	...	25/-



ADAMS & CO.'S 'VESTA' Pocket Camera

A folding Hand Camera for 4¼ by 3¼ plates that may be carried in the pocket. Complete with Dark Slide, Lens, Shutter, Focussing Screen, and Reversible Finder. Wray Lens, Pneumatic Shutter, properly timed, and Swing Back for upright pictures. Only 1½ in. thick, and ONLY WEIGHS 1 lb. WITH Double Dark Slide and two Plates. Must be seen to be believed. One of our many great photographic triumphs.

Complete, in case with 3 Double Backs **£7 7s.** net.

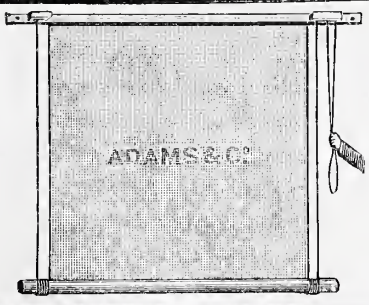


THE 'IDEAL' HAND CAMERA

Has repeated the phenomenal success of 1891, and the *Photography* Competition just decided again proves 'IDEAL' FIRST, OTHERS NOWHERE. Fifteen 'Ideals' and one 'Adams' carry off the prizes.

It is the ONLY Automatic Camera that is entirely free from complications, and the ONLY one that CANNOT get out of order. Every Camera is GUARANTEED.

No. 1. Fixed Focus, best Rectilinear Lens	...	...	**£7** net.
No. 2. Made to Focus, with WRAY Lens	...	...	**£8 10s.** net.



ADAMS & CO.'S NEW OPAQUE LANTERN SCREEN

A new Screen of stout linen, with beautifully even surface and QUITE OPAQUE. Can be fixed to any wall in a moment, and is complete with rollers, cords and pulleys for raising and lowering.

Prices—6 by 6, 20s.; 7 by 7, 23s.; 8 by 8, 28s.; 9 by 9, 35s.; 10 by 10, 45s.; 12 by 12, 65s.; 15 by 15, 110s.

ADAMS & Co 91. ALDERSGATE St. E.C. (FACING THE STATION) & AT 26. CHARING CROSS Rd. W.C (ADJOINING THE CAMERA CLUB) (CHARING CROSS END.) LONDON

Factories—3 and 4, ALDERSGATE BUILDINGS, E.C.

Christmas Mounts.

JUST PUBLISHED,

Our New Series of Mounts, giving **50** Endless Variety for all kinds of Prints.

IN THIS SERIES MOUNTS WILL BE FOUND SUITABLE FOR PLATINOTYPES, BROMIDES, GELATINE-CHLORIDE, AND SILVER PRINTS.

No. 21 Box.—Containing the complete variety of Christmas Photo Mounts from Midget to ½-Plates. Price 7/6, Postage 6d. extra.

No. 22 Box.—15 Selected Christmas Mounts, all different, for ¼-Plates only. Price 2/-, Postage 3d. extra.

No. 23 Box.—12 Selected Christmas Mounts, all different, for Cabinets and ½-Plates. Price 2/-, Postage 3d. extra.

New List of Christmas Mounts, just published, sent Post Free.

Special Mounts for Gelatine-Chloride Prints.

NEW DEPARTMENT—CUT-OUT MOUNTS TO ORDER.

We keep the Largest and Best Selected Stock of LATEST MOUNTS in the Market.

Our New Illustrated Catalogue of Mounts Post Free. All our Goods can be had through respectable Chemists and Photo Dealers at prices stated therein, and when compared will be found lower than any others in the Trade.

HANNAM & COMPANY,

SHOWROOMS AND WAREHOUSE: 25, SOHO SQUARE, LONDON, W. | CARDBOARD AND MOUNT FACTORY: ATLAS WORKS, GAINSBOROUGH.

PHOTOGRAPHS OF THE YEAR.

THE BOOK WILL CONTAIN

TWELVE REPRODUCTIONS

MOUNTED ON 15 BY 12 BOARDS, OF

NOTABLE PHOTOGRAPHS

IN THE

Pall Mall Exhibition of the Photographic Society of Great Britain,

With Descriptive Letterpress by

A. HORSLEY HINTON.

Published at 10s. 6d. Sent carriage free, packed in boards, to Subscribers ordering before publication, for **7s. 6d.**

London: HAZELL, WATSON, & VINEY, Ld., 1, Creed Lane, Ludgate Hill, E.C.

SUBSCRIBER'S ORDER FORM.

Messrs. HAZELL, WATSON, & VINEY, Ld.,
1, CREED LANE, E.C.

Please supply me with_____cop_____of "Photographs of the Year," for which I enclose_____value_____

*Name*_____

*Address*_____

ENGLISH MEASURES.

PROPORTION BETWEEN IMAGE AND OBJECT.

	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	1/10
f	3 1/8	4 3/8	5 1/2	5 1/2	5 7/8	6 1/4	6 11/16	7 1/8	7 5/8	7 11/16
$\angle f$	1/12	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/10
f	5 7/8	6 1/2	7 3/8	8 1/4	8 7/8	9 1/2	10 1/16	10 5/8	11 1/4	11 13/16
Δf	1/8	1/5	1/5	1/10	1/10	1/20	1/20	1/20	1/20	1/20
f	7 7/8	8 3/4	10 1/4	11	11 3/8	12 1/2	13 3/8	14 1/2	15 1/8	15 13/16
Δf	1/8	1/4	1/10	1/20	1/20	1/40	1/40	1/40	1/40	1/40
f	9 13/16	10 7/8	12 7/8	13 3/4	14 3/16	15 5/8	16 11/16	17 11/16	18 7/8	19 3/4
Δf	5/24	1/4	1/10	1/20	1/40	1/40	1/40	1/40	1/40	1/40
f	11 13/16	13	14 3/4	16 1/2	17	18 3/4	20 1/16	21 1/4	22 11/16	23 11/16
Δf	1/4	1/4	1/20	1/40	1/40	1/40	1/40	1/40	1/40	1/40
f	13 13/16	15 3/16	17 3/4	19 1/4	19 13/16	21 7/8	23 1/16	24 13/16	26 7/16	27 9/16
Δf	1/16	1/44	1/40	1/40	1/40	1/40	1/40	1/40	1/40	1/40
f	15 3/4	17 5/16	19 1/4	21 1/16	21 1/2	23 3/4	25 1/16	26 7/8	28 11/16	29 7/8
Δf	1/8	1/40	1/40	1/40	1/40	1/40	1/40	1/40	1/40	1/40
f	17 3/4	19 1/2	21 11/16	23 5/8	24 1/4	26 3/4	28 1/4	30 1/4	32 5/16	33 5/8
Δf	3/16	1/40	1/40	1/40	1/40	1/40	1/40	1/40	1/40	1/40
f	19 3/4	21 11/16	24 1/16	26 1/4	27	29 3/4	31 7/16	33 5/8	35 15/16	37 3/8
Δf	1/8	1/40	1/40	1/40	1/40	1/40	1/40	1/40	1/40	1/40

In the above tables f = the solar focus.
Δf = the correction for actinic rays.

We have given here the metric table and the English equivalents, and with regard to the latter we may point out that some of the fractions for the correction are absurd, because in practice one could not measure such distances, but one may always strike a fraction which will without appreciable error be accurate enough. Let us take as an example the fifth series, viz., a lens of $11\frac{13}{16}$ in. solar focus; and carrying our eye along the line we find that when focussing an object so that the image is $\frac{3}{10}$ of the natural size, the focus is lengthened to $15\frac{3}{8}$ in., and the necessary corrections for the actinic focus, or the distance that the lens has to be racked in towards the plate, is $\frac{101}{240}$; well, this is a fraction which none of us are likely to measure in practice, but if we say that the correction is $\frac{100}{240} = \frac{10}{24} = \frac{5}{12}$ of an inch, we can measure that, and we shall only be $\frac{1}{24}$ of an inch in error, a distance which will not make much difference one way or the other.

Exhibitions.

Society.	Entries close.	Opens.	Closes	Address of Secretary.
P.S.G.B.	—	Sept. 26	Nov. 10	The Assist. Sec., 5a, Pall Mall East
Camera Club	—	Oct. 17	Dec. 8	G. Davison, The Camera Club, Charing Cross Road, W.C.
Todmorden Scientific Assoc.	—	Nov. 5	—	Jno. T. Binns, 3, Garden Terrace, Todmorden
Hackney Photo. Soc. ...	Oct. 29	Nov. 15	Nov. 17	W. Fenton Jones, King Edward Road, Hackney
Leytonstone Camera Club...	Oct. 25	Nov. 10	Nov. 12	A. E. Bailey, Rose Bank, South West Road, Leytonstone
Brixton	—	Nov. 17	Nov. 19	F. W. Levett, 74, Geneva Road, Brixton.
Stanley Show...	—	Nov. 18	Nov. 26	H. Smith, 29, Finsbury Pavement, E.C.
South London	—	Nov. 24	Nov. 26	Chas. H. Oakden, 51, Melbourne Grove, E. Dulwich
Exeter Amateur Photo. Soc.	—	Nov. 24	Nov. 26	Rev. J. W Sparshatt, Fairfield House, Alphington Road, Exeter
Tunbridge Wells	Nov. 14	Nov. 23	Nov. 24	J. Chamberlain, 14, Calverley Park Gardens, Tunbridge Wells.

SOUTHPORT SOCIAL PHOTOGRAPHIC CLUB SOIREE AND EXHIBITION.

The second annual soiree was held on the 26th ult., when there was a very good muster of members and friends. Mr. R. J. Parkes, the President, commenced the proceedings with an address, in the course of which he reviewed the progress of the club since its formation, and alluded to its present satisfactory condition. Mr. George Cross then, by means of his limelight lantern, exhibited a number of slides which had been sent for competition, and a few others lent by Mr. Heaton and Mr. Kiddie.

The President, in a eulogistic speech, presented Mr. Cross, on behalf of the members, with an illuminated address and a very handsome book-case in celebration of his recent marriage, and in recognition of his services to the club during the present year. Mr. Cross suitably thanked the members. Messrs. Kay, Longmaid, and Thorp, who were the judges at the exhibition of the club, were cordially thanked for their most efficient services, and Mr. Kay, in replying on their behalf, complimented the members on the general excellence of the work sent in.

Refreshments were provided during the evening, and a number of lantern and stereoscopic and photographic views were on view and attracted considerable attention, having been lent for the occasion by Messrs. Cave, Dickin, and Heaton. Songs and recitations were given by Miss Wale, Miss Wilson, Miss Krause, Mr. Parker, and Mr. Depree, Mr. Arnold Cooke being the accompanist.

The annual exhibition of the club was held in Mr. Cross's Rooms, 156, Ambridge Arcade, from October 24th to 29th inclusive, when the following were the successful competitors:—

Lantern transparencies, set of twelve, any subject: First prize, Mr. Heaton; second prize, Mr. Atherton; certificate, Mr. J. C. Smith.

Landscapes, set of four, any size: Prize, Mr. Dickin; certificate, Mr. Heaton.

Portraits, untouched, set of four, any size: Prize, Miss Unsworth; certificate, Mr. Smith.

Animals, set of four, any size: Prize, Miss Unsworth; certificate, Miss Dunmore.

Instantaneous, 5 by 4 and under, set of six: Prize, Mr. Heaton; certificate, Mr. Thorp.

Decorative transparencies, half-plate and over, set of two: Prize, presented by Mr. J. R. Cave, Mr. Dickin.

Competition, for ladies only, set of four pictures, any size or subject: First prize, Miss Smith; second prize, Miss Dunmore.

Best exhibit (transparencies and enlargements excepted): Special prize, presented by Mr. Cross, Mr. Heaton.

Best set of six pictures, any size or subject, taken at the outdoor meetings of the club during the summer 1892: Special prize, presented by the President Mr. R. J. Parkes, Mr. Atherton.

Reviews.

The Art Annual for 1892: Prof. Hubert Herkomer, R.A., his Life and Work. By W. L. Courtney. Published by J. S. Virtue and Co., Ltd., 26, Ivy Lane, Paternoster Row, E.C. Price 2s. 6d.

This work, which forms the annual of the *Magazine of Art*, is always looked for and eagerly welcomed, and the one before us does not fail to come up to those which have preceded it. Professor Herkomer is without doubt the most versatile of all our Royal Academicians, and his life and work given here is at once both interesting and instructive. Graduating in the school of Frederick Walker, he has long struck out a distinct masterly style of his own, and now stands in a position possibly attained by no other artist. He is at once an etcher, a mezzo-tint engraver, a carver, a worker in iron, a master in oil and water colours, and also a playwright, actor, and musician. Besides these he is the head of the famous Bushey School of Art, and no one but those who had the privilege of seeing the works exhibited by him and his students at the Fine Art Society's Gallery in New Bond Street can appreciate the excellent work done at his school.

It is interesting to note that Professor Herkomer—and we state this on very good authority—recommends the use of the camera obscura for the purpose of learning correctness of colouring.

The story of Herkomer's life and work, written by W. L. Courtney for this book under review, is evidently written by someone who knows both the artist and the artist's work well, and the illustrations in the book are exceptionally fine, particularly the original etching by the artist called "Summer." The book is well worth buying.

Hints on Posing.

AT a recent meeting of the Foochow Camera Club, the following concise and useful hints were given by Mr. Rentzch :

"The first thing to consider is the background. Trees, as far as possible, should be avoided ; the light falling on the leaves causes white spots in the picture, producing a very disagreeable effect. A light-coloured wall is as good as anything, or, better still, the front of a house ; only then the group should be placed well in front of it, so that the building may be slightly out of focus, and not by its detail detract from the figures, which, be it remembered, should be portraits.

"The members of the group should be cautioned on no account to look higher than the top of the camera, and those on the right and left should look at it, not with the eyes only, but by slightly turning the head.

"As far as it possibly can be avoided, do not have two heads next to one another on the same level, and do not have two ladies in light-coloured dress one besides the other ; separate them by some one in the dark clothes.

"Arrange the group so that tall persons are in the middle and short persons at each end, and in the case of ladies wearing white dresses or colours which are white to the photographic eye, place them in the front row.

"The professional photographer frequently says, 'Please put on the beginning of a smile,' but as this usually results in a complete grin, and, in some cases, even a grimace, it seems to me far better to tell people to lightly close the lips, for nothing looks worse than to see a lot of people with their mouths half open in a semi-slobbering condition.

"It is impossible in a short paper like this to enter into the deeper portion of the subject regarding the balance of the picture and so on, but if the foregoing rules are remembered, there may be some hope that the average group taken in Foochow will be somewhat improved.

"The preceding rules may be summarised as follows :—

"No trees in the background.

"No looking higher than the top of the camera.

"No two adjoining heads on the same level.

"And no mouths open."

Notes on the Permanency of Gelatino-Chloride Prints.

BY WALTER E. WOODBURY.

THE use of gelatino-chloride papers has now become so general, especially amongst amateurs, that it would not, I feel certain, be out of place to turn our attention to the probable permanency of prints made upon them. As one who has worked with this class of paper long before it was first placed upon the market in Germany, and as the first introducer of the process commercially in this country, I can claim to discuss the matter upon a practical basis. The matter interested me from the very first, and I have had the advantage of time to assist me in my experiments in this direction. My opinion is that *under certain conditions* gelatino-chloride prints are as reasonably permanent as could be expected, far more so than albumen pictures. I have gelatine prints by me now that have been made seven years. Some are as perfect as the day they were made, others are hopelessly faded. To begin with, then, it is well known that the albumenate of silver formed in albumen paper is an exceedingly unstable salt, and one of the chief causes of fading. In gelatino-chloride paper this is done away with, and silver citrate or acetate substituted. It is in the manipulation, however, that so much lies. In toning, for instance, prints toned with certain baths are not likely to be so permanent as others. In my experiments I have found those containing the most gold to last the longest, so that it is to be seen that economy in this respect is by no means advisable if lasting results are to be desired. Only recently I was shown an album of gelatino-chloride prints, every one either yellow or brown. They were toned and fixed together in a combined bath. Here I consider lies one of the chief causes of fading, not in the use of this kind of bath, be it understood, but in the misuse of it. I have prints toned and fixed with Liesegang's combined bath five years ago that are perfect to-day. But, as I have already said, it is in the misuse of this bath where disaster arises. The toning and fixing actions do not always work together ; thus it happens that a print is removed because it is toned to the required colour, but no thought is given as to whether it has remained in the solution sufficiently long for the hyposulphite to complete its action, and this, as it will be seen later on, is a very important consideration. Then, again, with these combined baths, when the toning action is weak, more gold is added, but the addition of more fixing salt is usually forgotten. It is to be regretted that fixation is practically invisible, as in insufficient fixing lies the chief cause of fading. Most of the emulsions used are hardened with alum, and fixing is a much slower action than with albumen prints. I should recommend a bath not weaker than 3 oz. to 20 of water. Fix in this for fifteen minutes, and then remove to a fresh bath of the same proportions, and allow the prints to remain therein for ten minutes or so to dissolve the otherwise insoluble hyposulphite of silver. This may be said to be the only natural method of fixation, although very little used. Nevertheless I am convinced that if permanency is desirable this matter will tend very largely to secure it. We next come to the washing and freeing from hypo. A lot of twaddle has been written about the necessity of washing out all the hypo, this being the one and only cause of fading. It is not so, however. Of course, it is desirable to thoroughly remove all traces of the fixing salt, but after this *the longer gelatino-chloride of silver prints are washed the less permanent are they.* This may appear a startling statement to some, but it is nevertheless a true one. An hour in several complete changes of water serves to eliminate the hypo, and the prints should not be left in any longer, as the risk of decomposition of the gelatine setting in, and once the germs are laid the process continues afterwards, and it may be but a question of weeks before a marked change is discovered in the print. In mounting it need hardly be pointed out that an inferior mountant or bad quality boards will have a disastrous effect. The last point to be considered, however, is the keeping. Gelatine is peculiarly sensible to moisture, and if it is allowed to act upon it, decomposition rapidly sets in. Gelatine dry will keep for years, but moisten it, and it goes bad in a few hours. The advisability, therefore, of keeping the prints in a dry atmosphere cannot be too strongly pointed out.

From these remarks the conclusion we must arrive at is, that gelatine-chloride prints may be considered permanent (giving a reasonable interpretation of the word), provided that proper precautions be taken in their manufacture. These are—Gold should not be stinted in toning. The prints should be thoroughly fixed in two fixing solutions. The hypo should be freed by washing in several charges of water, and not by long immersion tending to decompose the gelatine. Pure mounts and mountant should be used. Lastly, reasonable precautions should be taken to protect the film from foreign action, particularly that of moisture.

Societies' Notes.

THE BORDER AMATEUR PHOTOGRAPHIC ASSOCIATION.—Patroness, Lady Gibson Carmichael ; Hon. President, Mr. George H. Gibson Carmichael ; President, Rev. W. Burnet Thomson, M.A., B.D. ; Vice-President, Mr. F. A. Blair, F.C.S. ; Hon. Secretary and Treasurer, Mr. Jas. Walker, 50, High Street, Galashiels ; Council, Messrs. Henry Fleming, Jas. Lewis, Robert Stewart, and John Wishart. This association has been formed for the purpose of meeting the needs of amateur photographers, by bringing together those interested in the subject, providing them with a common meeting-place, and promoting the study and practice of the art by meetings, discussions, excursions, and exhibitions. The work of the society will during the winter months be carried on by a monthly meeting on the first Friday of each month at 7.30 p.m. At this meeting papers will be read, discussions entered upon, and demonstrations given by members on subjects of interest, and especially on those likely to be of help to beginners. In addition part of each night will be set apart for question and discussion, by means of which the experience of the various members will be brought out. It is expected that during the season several evenings will be devoted to lantern lectures and the exhibition of the prize slides sent out by the photographic journals to societies on loan. As a meeting-place the society has been able to secure the studio belonging to Mr. Sanderson, High Street, which will be at the disposal of members every weekday at all hours. The studio contains a dark-room, enlarging apparatus, studio camera, backgrounds, etc., and ought to be of service to those whose home accommodation is limited or who desire to study portraiture. A considerable number have already joined, and Mr. Walker, 50, High Street, Galashiels, will be glad to enrol others. The subscription is 5s., and for apprentices 3s. 6d. per annum. The first meeting will be held on Friday, 4th inst., at 7.30 p.m., in the studio, when the President will deliver an opening address on "The History and Progress of Photography," after which a discussion on development will take place.

IT is proposed to form a society in Scarborough. Mr. N. Todd is the Hon. Secretary *pro tem.*

THE following are the newly-elected officers of the Uttoxeter Amateur Photographic Association: President, the Rev. F. C. L. Barnwell; Treasurer, Mr. R. T. A. Hardy; Committee, the Rev. F. C. L. Barnwell, Messrs. R. T. A. Hardy, A. Parker, F. Udale, S. B. Bamford, G. C. Wallis; Hon. Secretary, R. T. Walker, Balance Street, Uttoxeter.

CORNISH CAMERA CLUB.—The annual supper and meeting of this club took place on the 24th ult. at the Union Hotel, Penzance. The following officers were re-elected: President, W. E. Baily, C.C.; Vice-President, B. Vivian. Council, N. H. Symons, Barnes, Richards, R. Pearce Couch, J. Branwell, jun.; Hon. Treasurer, W. Herbert Percy; Hon. Secretary, H. Tonkin.

THE annual exhibition of the Glasgow and West of Scotland Amateur Photographic Association was opened in the rooms on 24th ult., remaining open till 7th November. Owing to the special effort put forth in connection with the international exhibition last year, the number of exhibits is smaller than usual. This was anticipated, and the number of classes was reduced. The following is a list of awards:—Landscape: 1st prize, silver medal, John Morison, jun.; extra silver medal, John W. Eadie; 2nd prize, bronze medal, Adam G. Brown. Instantaneous: 1st, W. Snell Anderson; 2nd, A. Lindsay Miller. Portraiture and figure studies: 1st, A. G. Reid; 2nd, John W. Eadie. Enlargements: 1st, Archd. Watson; 2nd, Stewart Smith. Transparencies: 1st, Archd. Watson; 2nd, A. Lindsay Miller.

THE Hackney Society should have a really good show, for from what we learn the following will compete, among a good lot:—Messrs. A. R. Dresser, Lyddell Sawyer, Mr. and Mrs. Welford, J. E. Austin, W. W. Winter, Bryne of Richmond, Post of America, Warneuke, Gottlieb, Adam Diston, etc. In addition to those announced in the apparatus section will be the following: Adams, Marions, Paget, Wray, Platinotype, Wormald, Park, Platte, Watson, Lund, Hannam, etc., etc.

AT a meeting of photographers held on Friday last at Burlington Hall, High Street, Aston, it was decided to establish a photographic society for Aston and district. Mr. Councillor Sydney Fisher presided, and spoke of the desirability of forming a means of social and mutual intercourse between those who practise the "dark art." There were also present Messrs. Tylar, Cracroft, Wollaston, Priddin, Casson, Cole, Wimwood, Dent, and other gentlemen. Among resolutions passed were the following:—"That a photographic society be formed; that it admit amateurs and professionals; that it meet fortnightly; that it meet at Burlington Hall; that we approach the Aston Natural History and Micro Society with a view to affiliating the Photographic Society with theirs, but taking alternate Thursdays for our separate meetings." The meeting was then adjourned until Thursday, 10th inst., to decide upon future business then. Twenty members actually joined. Fee, 5s. per annum, or 2s. 6d. half-yearly, payable in advance. Communications to Fred. W. Pilditch, Acting Secretary *pro tem.*, 133, Wells Street, Aston.

THE Oldham Photographic Society are able to show this year a very satisfactory account of their working programme during the last twelve months. They have now an excellent limelight lantern, and the nucleus of a library. The following are the members elected to the various offices at last meeting:—President, John Chadwick; Vice-President, Wallace Thompson; Treasurer, William Schofield; Committee, S. Ashton, J. Dawson, J. S. Dronsfield, J.P., J. Greaves, jun., T. Heywood, W. Jackson; Librarian, Thomas Birch; Hon. Secretary, Thomas Widdop, 16, Burnaby Street, Oldham; Assistant Secretary, J. Hilton Ashton, 114, Shawside, near Oldham.

AT the ordinary meeting of the P. S. G. B. at Pall Mall on the 8th inst., the President, Captain Abney, will deliver an address and present the medals, and Mr. Howard Farmer will read a paper on "Some Remarkable Properties of Silver and Gelatine."

THE attendance at Pall Mall still keeps up. Last week there were 1,213 visitors, making a total of 7,490 since the opening. We hear that the lantern evenings especially have increased in popularity, and, with the exception of 1889, this year's exhibition heads the list up to the present.

OUR readers are requested to note that Mr. Harry Pritchard, 162, Oxford Lane, Warrington, is the Hon. Sec. of the Warrington Am: Phot; Soc;

Societies' Meetings.

Cardiff Photographic Society.—The winter session was inaugurated on the 28th ult., with a lecturette by Mr. F. Treharne. The lecturer gave his experiences of "A Trip to South Africa," and illustrated his remarks by some capital lantern slides. The different industries of gold mining, ostrich farming, and diamond finding were dealt with in a graphic manner, and the statistics referring to the staple products of the colony, proved most instructive. Mr. Faulks ably manipulated the limelight.

Croydon (Camera Club).—31st ult., Mr. Maclean in the chair. Messrs. Diamond and J. B. Hartlewell were elected members. In consequence of a failure in the gas supply, it was impossible to show members' slides, as intended. It was, however, arranged to do so on Wednesday, November 2nd, instead. Mr. C. E. Whitaker exhibited a large number of views of good quality, and Mr. Bray a striking example of picture-making, entitled "The Hay-nest." On Friday, November 4th, Mr. Robinson's slides will be shown at Braithwaite Hall, and on Monday, November 7th, Mr. Charles Hussey will read a paper on stereoscopic photography at the club rooms.

Devonport (Camera Club).—The session opened with a lantern evening, the views being supplied mostly from work of the members, and thrown on the screen by one of the Vice-Presidents, Mr. E. J. Seymour, whose fine lantern was used for the purpose. The collection was a good one, and the quality was of considerable merit. Several new members were nominated and a number of visitors were present. A special evening was devoted to viewing the hand-camera prints (1892). The club will for the future hold its meetings at rooms in Granby Buildings, being more commodious than those formerly used.

Fairfield.—This club held its first fortnightly meeting for the season on the 25th ult., when, in the absence of the President, Mr. R. J. Sutherland was voted to the chair, the subject for the evening being a practical demonstration on bromide paper by Mr. J. W. Welch, who treated the whole subject in his usual interesting and amusing style, but giving full details, and showing how to manipulate the paper in such a style that the merest tyro could follow. During the evening an ingenious contrivance, the invention of one of the members, was exhibited, whereby stereo pictures could be taken with a single camera.

Glasgow High School.—The society met on the 28th ult., Mr. McCall in the chair. There was a large attendance of members. The subject of the evening was an address by Mr. Haddow, on "Amateur Photography." He treated his subject in an exceptionally skilful manner. First, he touched briefly on the history of photography, and afterwards gave a very humorous account of a beginner's difficulties.

Harlesden and Willesden.—A meeting was held on 25th ult., J. Nayler in the chair. After the usual business of the Society, election of new members, etc, Mr. Woodbury gave a demonstration on gelatino-chloride printing processes. The Secretary handed round some samples of the new Paget Prize lantern plates kindly sent by the Company, and instructed the members in the methods of making lantern-slides by contact and reduction. The next meeting on the 22nd inst., will be a lantern evening.

Hackney.—Weekly meeting held on 25th ult., Mr. F. Houghton presiding. Mr. R. J. Fry was nominated for membership. Mr. Gosling asked for experience of gelatino-chloride paper. The Chairman was rather in favour of over-printing and long toning. Mr. Beckett said plenty of gold should be used. A discussion then ensued on the new platinum paper. Mr. Grant found it required more printing than the hot bath. Mr. Gosling asked for a better mountant than starch for P.O.P. prints. Mr. Barker advised Houghton's "Excelsior" as being always ready for use. Mr. P. Beckett then proceeded to give a demonstration on "Flashlight Photography." He did not recommend such explosives as chlorate potash, etc., as they were apt to cause the sitter to start. Portraiture was not eminently adapted for flashlight. It did not come near electric light. For interiors, such as churches, it was quite at home, so to speak, and for caves and subterranean matters invaluable. Its defects were that it was apt to cause people to blink their eyes, another was getting rid of the smoke, and again there were generally unburnt particles flying about which would grind into carpets, etc. Demonstrations were then given, and the lecturer showed the way of placing lamps, using two pairs of steps, reflectors, etc. The lights must be placed so that there was softness in the shadows and reflections in the eyes avoided. Mr. Dando had seen good pictures obtained by using platinotype lamp. Mr. Hudson showed his flash lamp (continuous). He used magnesium powder, which was blown through the centre of a spirit lamp, and gave a continuous and powerful light.

Liverpool (Camera Club).—At the meeting held on the 26th ult., under the presidency of Mr. Jas. Smith, a demonstration was given by Mr. W. Anderson Brown on "Ilford P.O.P., and How to Obtain

the Best Results." Mr. Brown, who made the demonstration practical and therefore more interesting, made up baths of sulphocyanide of various strengths, explaining the action of each. The lecturer then proceeded to tone prints on Ilford P.O.P. in each of the baths, the results being very satisfactory. Mr. Brown also explained a novel method of squeegeeing prints on glass. The second annual fancy dress ball is to be held on Monday, 12th December, and promises to be a great success.

Liverpool (A.P.A.)—The ordinary monthly meeting was held on the 27th ult., the President (Mr. W. Tomkinson) in the chair. Messrs. A. Bradbury and E. V. Swinden were appointed to audit the annual accounts. Mr. B. J. Sayce exhibited two fine platinotype pictures of "The Strid" and "The Meeting of the Waters," Bolton Woods, from negatives taken direct on 26 by 23 plates, by Mr. William Brown, of Leeds. Mr. C. B. Reader brought before the meeting an invention by himself and Mr. Potter, consisting of a new method of artificial lighting specially adapted for enlarging and reducing. Taking equal quantities of magnesium powder and chlorate of potash, Mr. Reader explained that by means of a piece of perforated zinc he distributed it equally over a sheet of pyroxyline paper, and upon this he pasted another sheet of the same paper. A piece of this preparation about ten inches square produced, when ignited, a flash sufficiently bright and lasting to make a lantern slide by reduction from half-plate. Mr. Reader showed a slide made in this way which was equal in all respects to those made by daylight. The next business was the exhibition of the AMATEUR PHOTOGRAPHER Prize Slides, which were explained by the President. The show was much appreciated by a large gathering of members, the figure studies by Mrs. F. Clarke drawing forth great applause.

Margate—The members met on 25th ult., to inaugurate their monthly meetings, and spent a pleasant evening. Specimens of recent work done by members were upon the table (most of them contributed by the President, Dr. Elliott), which led to a discussion upon the merits of the many makes of plates, papers, etc., and the results of different developers. The first business of the evening was to appoint a successor to the late Hon. Secretary, Mr. A. King, and Mr. W. S. Harvey accepted the post. Later on it was decided to meet once every month during the winter, when members of this, or kindred societies will be invited to give demonstrations of practical work, or contribute papers on photography; the first to be given by Mr. Tweedie on lantern-slide making. Although quite young, the society offers to its members (ladies or gentlemen) many advantages, including free use of Mr. Tweedie's laboratory for its monthly meetings, a circulation of weeklies, monthlies, and annuals to the value of £1 per annum, and the use of a dark-room at the Central Pharmacy on special terms.

P.S.G.B.—Technical meeting, on 25th ult., Mr. T. R. Dalimeyer in the chair, who announced that he had brought another view of Mont Blanc by M. F. Boissonnas, taken with the tele-photographic lens, which, if members would compare with that in the exhibition at Pall Mall, they would find to be far superior in definition, owing to the weather having been windy when the first view was taken. The Hon. Secretary exhibited and explained Messrs. Watson and Son's new Alpha hand-camera, for use with double backs, and stated that the parts were interchangeable. The Chairman then called upon Mr. F. P. Cembrano, junr., to open the subject of the evening, "Architectural Photography." Mr. Cembrano subdivided this subject into three parts—apparatus, process, and subject. For the first he recommended a tripod with sliding legs, with some device to prevent them slipping about; a square bellows camera, as with the ordinary conical bellows he found there was a difficulty when using short-focus lenses. Another point was to employ a camera with a perfectly square back, so as to be able to draw the shutter from right, left, top, or bottom. He had never found any use for swing-front, and exhibited a level which could be placed on the top of the camera, and the position of the bubble seen without having to look down on the instrument. He did not recommend taking the picture from a high point of view, as when taken from a height of 10 or 12 ft. One did not get the representation of the subject as one was accustomed to see it. The best point of view was the height of one's eyes. He then proceeded to project on the screen a number of slides illustrating his remarks, to the first of which he had given an exposure of twenty-eight minutes with *f*/45, and then a further exposure of fifteen minutes with *f*/16, and had not found any doubling of the image, but in addition to the importance of giving further exposure, it was necessary to be very careful in development, and he exhibited a number of slides in which the deep shadows had been brought out by development with a brush. He started with a weak developer to bring the image out, and when once it showed, washed the plate thoroughly, and then, using a stronger developer, applied with a brush, developed up the heavier shadows, washing for a minute or two, and strengthening the developer. In taking interiors it gave pictorial effect to the picture, in his opinion, and a better idea of depth, if it was taken, when possible, facing the light. In conclusion, he indicated the suitability of an optical lantern, with a large screen, for showing architectural photographs to advantage. Mr. Chapman Jones exhibited some examples of distortion obtained by tilting the plate, and the partial cure of the same by copying, tilting the negative or plate again when doing so. He had never heard how the difficulty of restoring the proper proportions, caused by the varying distance of the various parts of the plate from the lens, could be overcome. Mr. Sebastian Davies thought Mr. Cembrano's method of development was applicable in more instances than architectural photography only, and in reply to a question by the latter, the Chairman stated that it was impossible to obviate the exaggerated perspective caused by tilting the camera, as it depended upon certain laws of true monocular perspective which was an absolute science, and these laws could not be got away from. He quite agreed with Mr. Cembrano as to the applicability of the optical lantern with a big screen for architectural subjects.

Richmond.—At the meeting held on the 24th ult., the President in the chair, Mr. G. Ardaseer showed Cowan's lantern-slide printing frame, a most convenient piece of apparatus for making slides by contact, and very suitable for collodio-bromide plates, as, with it, there is little risk of damaging the film by abrasion. Mr. F. P. Cembrano, jun., gave a demonstration on "Transparency Making without a Dark-room." He said that it was his aim that evening to demonstrate that no dark-room, nor even a developing lamp, or the use of non-actinic media, were at all necessary for the pursuit of that fascinating branch of photography, transparency-making. The reproach that amateurs were selfish because no sooner they returned home from work they shut themselves up into their dark-rooms could no longer be cast upon them. Long winter evenings could be socially spent at home without giving up lantern-slide work, and provided a little care was used when developing, and the table was covered with a piece of oil-cloth, no damage need be feared for the furniture or carpets. Mr. Cembrano followed his remarks by developing several plates by the light, and within three feet of an ordinary Argand gas burner, several of the gas jets in the room remaining alight. An ordinary dish was used, and the plates while in the developer, were not screened from the light. The resulting transparencies showed absolutely clear glass in the parts that had been protected by a mask during the exposure. The exposure (contact) was one inch of magnesium at distances from three to ten inches. The first slide was made on a Cowan's chloride plate, and was developed with pyro and carbonate ammonia, and bromide and acetate of soda. The second one, also a Cowan's chloride plate, was developed with hydrokinone, caustic potash, and carbonate of ammonia, the resulting colour being a nice brown. A collodio-bromide plate also gave equally good results. The demonstration was brought to an end by exposing two of Marion's Bartolozzi opals, one of which was developed with amidol and the other with hydrokinone. The former gave a black image, while the colour obtained with the second developer was light sepia. Mr. Ennis asked which would be the best way to obtain warm tones on slides. Mr. Cembrano replied that with gelatine as well as with collodion plates any colour, from black to red, could be obtained. He had not been able to get warm tones with eikonogen, but with pyro or hydrokinone a good rich colour could be got by giving a prolonged exposure and using a well-restrained developer containing carbonate of ammonia. Mr. Ardaseer added that he had obtained a warm tone with eikonogen by using carbonate of ammonia. Subject for discussion at the next meeting, "Preparing Work for Exhibitions."

The Lantern Society.—On the 24th ult. Mr. Taylor exhibited an improved form of Lawson's Saturator, which gave a very brilliant light. Mr. Askew exhibited his portable lantern and stand of ingenious construction, and capable of being carried on a bicycle; it is made by Messrs. Newton. The Hon. Secretary then showed a lantern of a novel description, which he had designed for his own use. In its construction aluminium was used wherever practicable. Instead of the metal-lined mahogany body, there was a cloth curtain lined with asbestos; the condenser, mounted in aluminium, was held between two thin plates of the same metal, and the slide-carrier was held rigidly in position by means of an aluminium plate and two screws. The lens was mounted in a plain aluminium tube, and was carried by a small saddle, moving along the front board by means of a rack and pinion, and connected to the lantern body by a small camera bellows. For packing away, the whole thing folded up, and together with all the necessary fittings and two regulators, stowed away in a box 18 by 12 by 5½ in. The total weight, including the box and regulators, was about 21 lb. the corresponding weight of the lantern which it has superseded being 38 lb. The space for the jet was practically the same as in an ordinary lantern, so that any jet, or an oil lamp, could be used with it.

Torquay.—This association held its annual meeting on 26th ult., Mr. A. R. Hunt (Vice-President) in the chair. The report of the year's work was adopted, and the accounts showed a satisfactory balance to the good. Several of the rules were amended. The following officers and Committee were elected for 1892-3:—President,

Mr. E. Vivian, J.P. ; Vice-Presidents, Messrs. A. R. Hunt, M.A., and T. Willoughby; Committee, Dr. Briggs, Messrs. C. E. Robinson, G. Edwards, Gregory, W. H. Baynes, Tozer, and Mayne; Hon. Secretary and Treasurer, Mr. H. C. Howell, Nutley, Torquay. It was announced that a very satisfactory programme had been arranged for the coming session. It includes a four-day exhibition in February, at Iredale's Picture Gallery. The AMATEUR PHOTOGRAPHER'S Monthly Competition Prize Prints, which included some very fine pictures, were also on view.

SOCIETIES' FIXTURES.

Nov. 3.—LEEDS.—Annual Lantern Exhibition.
" 3.—LONDON AND PROVINCIAL.—"Rapidities of Various Printing Processes," Mr. B. Foulkes Winks.
" 3.—WIGAN.—Ordinary Meeting.
" 4.—ISLE OF THANET.—"Demonstration of the Platinotype Process," Mr. S. Buchanan Wollaston.
" 4.—CROYDON.—"Picture-Making by Photography," Mr. C. W. Hastings.
" 4.—LEWISHAM.—"Lantern Slides by Reduction." Mr. R. W. James.
" 4.—LEEDS.—Lantern Evening.
" 4.—CARDIFF.—Society's Slides.
" 5.—HULL.—"Photographic Trips." Mr. J. H. Allcott.
" 7.—CROYDON. — "Stereoscopic Photography." Mr. C. Hussey.
" 7.—RICHMOND.—Lantern Evening.
" 7.—PUTNEY.—"Platinum Printing Processs." Mr. Buchanan Wollaston.
" 7.—S. LONDON.—Members' Lantern Night.
" 7.—ACCRINGTON.—Annual Meeting.
" 8.—P.S.G.B.—"Some Remarkable Properties of Silver and Gelatine." Mr. Howard Farmer. Presentation of the Medals.
" 8.—HEREFORDSHIRE.—"Platinotype and Matt-surface Printing." Mr. A. Watkins.
" 8.—LOUTH.—"What is a Technically Perfect Negative," Rev. J. M. Coates.
" 8.—BIRMINGHAM.—Members' Lantern Night.
" 8.—MANCHESTER (A. P.)—Technical Lantern Evening.
" 9.—THE PHOTO. CLUB.—Members' Open Night.
" 9.—LIVERPOOL.—Demonstration of the Oxy-Hydrogen Lantern. Mr. F. Anyon.
" 9.—LIVERPOOL (Camera).—"The Lantern for Home Use."
" 10.—BIRKENHEAD.—Annual Meeting.
" 10.—HULL.—Smoking Concert.
" 10.—PRESTON.—"Transparencies." Mr. J. Macintosh.
" 10.—LONDON AND PROVINCIAL.—"Outdoor Work," Mr. Ernest Milner.
" 10.—HEXHAM.—Lantern Evening.
" 11.—P. S. IRELAND.—Discussion on Matters of Photographic Interest. Started by Mr. J. A. C. Lutheon.
" 11.—CARDIFF.—Ordinary Meeting.
" 11.—NEWCASTLE-ON-TYNE.—Conversazione.
" 12.—HACKNEY.—"Gelatino-Chloride Paper," Mr. J. Howson.

TONING BY ACETATE OF LIME.

ACCORDING to M. Hermitte of Marseilles, the operation of toning constitutes one of the greatest difficulties for amateur photographers. The acetate of soda bath behaves very well when it is new; but unfortunately it spoils quickly, it acts then very slowly, and the tones it gives leave much to be desired. The opposite is the case with the acetate of lime, which tones very quickly, even too quickly for an inexperienced operator. It keeps a long time with its initial energy, if one resorts to the dodge indicated further on.

The principal quality of this toning bath is to reduce easily the persalt of gold into the proto salt, yet leaving it a sufficiently necessary stability not to injure the print in toning.

In toning with acetate of soda, the proto salt of gold is by use gradually reduced, which is clearly indicated by the colouring of the toning bath and the black deposit which is formed. Too much prolonged, the toning with acetate of soda gives almost always disagreeable grey tones even with very vigorous negatives; it eats into the print, and may later give rise to yellowish tones.

This inconvenience is not to be feared with the toning bath of acetate of lime. When toned quickly and thoroughly, the image keeps all its pluck and brilliancy ; it does not lose sensibly. Consequently the proof ought to be printed very little more than desired at the finish. Even toned to black, the colouring of the paper undergoes no modification, the whites are very pure, and the proof is better than with all other toning baths.

Here is the formula based on that of acetate of soda, and replacing this by its equivalent in acetate of lime.

Solution No. 1.

Distilled water	500 parts
Brown chloride of gold	15 "

Solution No. 2.

Distilled water	1,500 parts
Acetate of lime	27½ "

It is prepared in the same way as the acetate of soda bath. As to the tint of the proofs, it is essential to always keep below the shade finally desired, because, although undergoing no appreciable change in this sense in fixing, it is certain that in the final washing, and above all in drying, the proofs tend to rich grey tones, especially in the half-tones. This action continues even after mounting the prints.

Finally this bath will keep well, and when it is desired to use it again it is only necessary to add to it one-tenth of its volume of distilled water and a little gold, half or three-quarters of an hour before using. After toning filter through chalk.

Discovery of Three New Planets by Photography.—M. Perrotin has communicated to the French Academy an account of the discovery of three small planets by M. Charlois, of the Nice Observatory, by the aid of photography. The apparatus employed consisted of a Hermagis portrait lens of 15 cm. aperture and 80 cm. focal length, mounted provisionally on M. Loewy's *equatorial coude*. The instrument was being employed for the photography of the region of the ecliptic. With exposures ranging from two hours and a half to three hours, the eight negatives obtained since September 12th cover a region 80 deg. long and 10 deg. broad, and show all the stars visible through the 38 cm. refractor. A careful examination of the plates reveals the presence of three unknown and eight known planets. The former, now known under the names 1892, D, E, and F, are all of about the twelfth magnitude.—*Nature.*

Photographs of Prehistoric and Ancient Objects.—The report of the Committee, consisting of Mr. E. Seward (Secretary), the Marquis of Bute, Messrs. G. T. Clark, R. W. Atkinson, Franklen G. Evans, C. Tanfield Vachell, James Bell, and T. H. Thomas, and Dr. J. G. Garson, appointed to report on the Prehistoric and Ancient Remains of Glamorganshire (drawn up by the Secretary), stated that the work of registering the localities of the prehistoric and ancient remains of Glamorgan has proceeded. Important help to the Committee's work has been rendered by the Cardiff Naturalists Society. The Cardiff Amateur Photographic Society, by means of prizes offered to their members, have produced some hundreds of valuable original photographs of prehistoric and ancient objects in the county, most of such objects within the county having thereby been illustrated. This collection, which is believed to be the most extensive yet formed in any district, is stored at the Cardiff Free Library. The Corporation have given good aid to the work by important grants to the Prize Fund.

Liquid Ammonia.—At one of the recent meetings of the Franklin Institute (Chemical Section) a paper was read, by Dr. Hans von Strombeck, on "The Composition of the Liquid Ammonia of the Trade, and how to Manufacture Liquid Ammonia of really 99.995 per cent." In the course of this some interesting particulars were given. For example, the so-called anhydrous ammonia was found to yield, on evaporation, crystals of ammonia sesquicarbonate—not much, certainly, but it was there; and more noteworthy still was the presence of from 0·004 to 0·035 per cent. of mineral oil, to which the faint yellow colour of anhydrous ammonia is due. There was present also from 0·117 to 2·88 per cent. of a colourless fluid, having a specific gravity of 0·7948 at 60 deg. F. This, on fractionation, was found to consist of methyl, ethyl, and isopropyl alcohols, acetone, and methyl-ethyl-ketone, besides traces of ethers. In the process which the author has devised for making the almost absolute ammonia (it contains 0·005 per cent. of mineral oil, but nothing else than NH_4HO), the author removes these alcohols and ketones by passing the ammonia-gas through a vessel containing fused sodium, the result being that sodium derivatives of the organic bodies are formed with the elimination of hydrogen, and the ammonia sesquicarbonate is decomposed according to the following equation :—

$$[(NH_4)_2CO_3 + HN_4HCO_3] + 2Na_2 = 3NH_3 + 2NA_2CO_3 + 2H_2.$$

The hydrogen is absorbed on passing the mixture of it and ammonia gas through palladium. It looks costly to speak of sodium and palladium in connection with a commercial process, but, as a matter of fact, the increased cost is less than 1c. per lb.—*Chemist and Druggist.*

Mr. Paul Lange is to give his popular lecture, "Norway Revisited in 1892," at the Picton Lecture Hall on Sunday, December 4th, in connection with the Liverpool Sunday Society.

M. Marey, the well known investigator of animal movements by means of instantaneous photography and the zoetrope, has now succeeded in rendering the beating of a living heart visible to the eye. All the phases of the movement can be followed and properly examined by this new method. The heart employed in his experiments was that of a turtle.

M. Gaston Tissandier has recently drawn attention to what he calls "Photographic mirage." Three years ago M. Paul Roy photographed his young son in the open day, and on developing the picture found to his surprise a vague image of himself in the background, as he stood in the act of removing the cap from the lens to take the photograph. As a matter of fact, his image had been formed on the atmosphere haze, and although invisible to his eyesight, it was strong enough to affect the plate. Another instance occurred to M. Le Corbeiller, member of the Photographic Club of Paris, who, in developing a view he had taken of the statue of David by Michael Angelo, at Florence, discovered that a gigantic shadow of the figure had been projected on the clouds behind, after the manner of the Spectre of Brocken. He saw nothing of this shadow while taking the view, but it was strong enough to affect the gelatine-bromide plate.

Star-Photography.—Largest Instrument Made.—News reaches the Astronomer-Royal at Greenwich Observatory of a remarkable lens just made for the purpose of photographing the stars. It has been made for Harvard Observatory, and is the present of a lady named Crush. There are four photographing lenses, and in front of these is the prism for photographing the spectrum of stars. Its thickest edge is three inches, and the thinnest seven-eighths of an inch in thickness. The lenses are all made of the finest kind of optical glass, and their average weight is 100 lb. each. The bed-plate is 10 ft. 4½ in., and its breadth is six feet. This swings on a great steel axle ten feet long and weighing 2,200 lb. The wheel to which the clockwork is attached, regulating the movement of the instrument to the motion of the earth, is five feet in diameter, and the gearing is exceedingly delicate and nicely adjusted. It is expected that with this instrument, the largest ever made for the purpose, some interesting results will be obtained. It is a pity it was not ready in time for use when Mars was in its most favourable position for observation.

The Photography of Colours.—At a meeting of the Academy of Sciences on Monday, October 24th, great attention was paid to a paper read by M. Lippmann on his researches concerning the photography of colours. The many coloured negatives shown were passed round, and appeared to convince the assembly of the valuable results obtained by the learned Sorbonne professor. M. de Freycinet, the French Minister of War, who was present, evinced great interest in the subject. The tints of these new coloured photographs are obtained on bichromate albumen or gelatine. A thin layer of the substance is spread and dried on a glass plate, and then exposed in the dark-room, backed by a film of mercury. The operations of developing and fixing are performed by simply washing with pure water; the colours then become very brilliant. The theory of the new experiment is the same as that on which M. Lippmann obtained his previous results.

The Staffordshire Photographic Survey Society.—A very well attended general meeting (the first of the season) of the above Society was held at the head-quarters, the Stoke-on-Trent Free Library, on the 24th ult., Mr. Chas. Lynam occupying the chair. An excellent collection of lantern slides of places of historic interest in the county of Staffordshire was exhibited, the major part of them being made by Mr. W. A. Meigh, including a very fine set illustrative of Croxden Abbey; also views in Hanley, Caverswall, Stoke-on-Trent, Madeley, Cheddleton, Keele, and others. There were also several slides from West Bromwich, by Mr. Thompson, and from Wolstanton by Mr. J. W. Turner. The Chairman gave a most interesting account of the ruins of Croxden Abbey, and a hearty vote of thanks was passed to him for his kindness. The Secretary (Mr. A. J. Caddie) pointed out the desirability of forming a good collection of lantern slides of Staffordshire in connection with the Society, so that at some future date a public exhibition might be held. A fairly good number of photographic prints were sent in by the members for the Society's collection, and several new members were elected. It was resolved that the offer of the Platinotype Company of a lecture on the platinotype process, to be delivered on December 12th, be accepted with thanks, the lecturer being Mr. Buchanan Wollaston. A vote of thanks was passed to Mr. Hammond, who kindly gave his services with lantern free; and also to the gentlemen who had sent in slides.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5850. **Altering a Group.**—I want to take out a person from a group and put in someone else. Will any reader kindly show me how to do this?—HIRCUS.

5851. **Neutralising Clearing Bath.**—Would any reader be so kind as to tell me through these columns if it is possible to neutralise the acetic acid used to clear bromide paper after development with ferrous oxalate, so as to preserve the prints with less or no washing before fixing?—LANTERN.

5852. **Lantern Screen.**—Would any reader kindly tell me through these columns how to make a strong portable wooden frame to stretch a lantern screen on? —LANTERN.

5853. **Three-Ply Fretwork.**—Where can this be obtained in London?—ST. BRIEUC.

5854. **Biarritz.**—Can any of your readers inform me if there is any dealer at Biarritz who keeps the English size plates, quarter-plate size, for snap-shot work, and is a dark-room to be had anywhere there? —E. D.

5855. **Plain Papers.**—Can any reader tell me where I can get Rives' or Whatman's drawing papers? —AMATEUR.

5856. **Toning Slides.**—Can any of your readers tell me of a good formula for toning lantern slides with chloro-platinite of potassium; and is there any harm in intensifying them with bichloride of mercury and ammonia if they are at all weak in density?—PERPLEXED.

5857. **Toning Bath.**—Can any of the toning baths recommended for Eastman's Solio paper be returned after use to the bottle of stock solution, and then kept till required next time; and if so, what precautions are necessary to prevent the gold from depositing in the bottle?—J. W. W.

5858. **Vulcanite Sheets.**—I have used the above for some time to burnish my small prints on, but have just recently had great difficulty in removing them when dry, some portion of nearly all the prints sticking firmly. I have tried cleaning the vulcanite with ammonia, but without success. The surface of the vulcanite is not so glossy as formerly. Can this be the cause of the sticking, and if so, can I repolish it?—J. W. W.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Oct. 24th.—Nos. 5847, 5849.

ANSWERS.

5827. **Transferring Albumen Prints.**—The only possible method of doing this would be as in the chrystoleum process, that is by using freshly made starch paste, applying to the face of the print, and squeegeeing down well, allowing to dry, and rubbing off the paper with fine pumice powder at first, and then with the finger. Positives may be made on china, however, by flowing the same with salted albumen, allowing to dry, and then sensitising the film with nitrate of silver, and printing out in the ordinary way. But unless films were used it would be difficult to obtain absolute contact all over, and there might be the danger of fracture of negative.—EDITOR.

5834. **Accidental Exposure.**—The only explanation possible is that the slide was not open sufficiently long for the plate to be affected by the light in the room.—EDITOR.

5835. **Enlarging.**—At the beginning of this year a series of articles called "Notes on Enlarging" were published in our columns which would give all the necessary information.—EDITOR.

5841. **Mounting Solio Prints.**—Provided the prints are backed with black waterproof backing paper whilst on their glazing support they may be mounted with ordinary starch paste in the usual way when stripped. Some use indiarubber solution, others epirituous gelatine mountant, which are quite safe.—EDITOR.

5844. **Toning.**—The formula given will certainly tone chloride prints, and gives them good tones.—EDITOR.

5846. **Portraits on Plain Paper.**—The illustrations in our columns are reproduced from prints by what is called the half tone or half tint process block. As these may be obtained commercially of excellent quality at a very reasonable rate, and the process is not easy for an amateur to take up and succeed with in a reasonable time, it will be far better for the querist to send us stamped addressed envelope, and we will give him the address of one or two firms.—EDITOR.

5848. **Sensitising Silk.**—Better to buy it, I should think. You can get it from Adams and Co., 81, Aldersgate Street, E.C.—R. A. R. BENNETT.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

DEVELOPER.—Easy, friend, you set us no mean task. Will you do your part of it—that is, will you press the button if we'll do the rest, will you expose the plates if we develop them. You cannot lay down a hard and fast rule and say that under certain conditions the image will appear in so many seconds, and be completed in so many minutes, because you must suit your method of development to the subject. However, we will try and help you. If we send you some plates, will you press the button if we do the rest. Let us hear from you again.

G. P. S. SCOTT.—It would not be fair for us to give any opinion on your print, as it is more than likely we may have something to do with the judging. However, send it in by all means, and try your luck. The small camera you name is a very efficient and capable instrument, and has a very good lens. It is merely a question of practice to be able to judge the distances correctly, and it is not more difficult with the camera you specially name than with any other. Amidol is a good developer, especially for hand-camera shots, but, like everything else, wants learning how to use.

MRS. E. CLEASBY. — The cause of iridescent fog may be either (1) a fault in the emulsion, which is not likely to occur; (2) or stale developer; (3) or stale films; (4) or to the films having been exposed to fumes of some kind, such as gas; (5) or a very slight trace of hypo in the developer. This peculiar fog is not detrimental to the negatives, and we should say would rather improve the printing quality of yours, as they are too thin. The fact of one dozen having developed up denser on one side than the other, is, we must confess, beyond our powers of explanation. It may be due to some fault in the film, but we do not like to state that definitely without knowing a little more. It may be due to too strong a light having access to the plate during development, though this does not seem feasible, because the edges are clean. Can we help you by offering to develop one or two films for you?

NEMO.—(1) We must confess that this is quite beyond us, nor do we think anyone could tell you except a retoucher, and he would not probably. (2) Yes, there is yet room at the top for good men and good work.

HIRCUS.—(1) You might cut nearly an inch off the right side, and half an inch off left and top. It would stand enlarging. The print is all right. (2) Negative too thin, wants intensifying, much over-printed. (3) Over-exposed and flat, less exposure or weaker developer and more bromide would help you. (4) Ditto. Colour too grey. (5) Negative wants intensifying. A very good copy though. It is possible to take out or put in a figure of a group, but it is no easy matter. We insert query, and if not answered, we will do so.

D. M.—We know of no portfolio club with headquarters in Scotland. See p. 299—letter by F. G. Reader.

TUM-TUM.—Use distilled water, or else boil your water, and allow to cool. Do not expose quite so near the light and use less bromide.

F. YOUNG.—Quite welcome to anything we have done for you.

D. J. NEILL.—We may include animals in instantaneous. Two slides only required in each competition. We shall have stereo competition next year.

ST. BRISUC.—Harger Bros., Settle, Yorkshire, is the only firm we know. We have inserted as query.

BOTANY BAY.—Always very glad to see you and help you as far as we can. You will see in this week's issue, p. 327, an article on spectacle lenses. The darker screen requires double the exposure of the light one. Benham and Froud's Perfection lamp is the one. The print you enclose is one of those curiosities which are met with sometimes. The explanation is that the shadow side of the face is so dark as not to interfere with the brightly-lit side of the previous exposure. Place your sitter further from light, and use a sheet over clothes horse as reflector for shadow side.

W. R. GOULD.—There is no firm that makes printing-out lantern plates, but Tylar, of Birmingham, sells a print-out emulsion, which you could use for making the same.

M. E.—Probably you have not yet been able to disabuse your mind of the long exposures necessary for wet work. Over-exposure and fog is the cause of the poor print No. 1. Nos. 2 and 3 are alright, but are they not from wet plates? No. 4 is also alright. You will find in "Photographic Procedure," pp. 170, 244, 250, full instructions for using pyro and ammonia.

ALPHA.—(1) To find the equiv. focus of your lens, focus the sun, or—if, like us, you have not many opportunities of seeing that—the clouds. When sharp, measure the distance from lens to screen, then divide by the diaphragm aperture. In taking a portrait at close quarters the lens is necessarily racked out, and the *f/x* aperture becomes temporarily reduced. (2) The advantage of having lenses of different foci is that from the same standpoint you can get images of different sizes; for instance, let us say you are going to take a house from one side of a river, and you have 4, 6, and 8 in. focus lenses, then with the 4 in. you presumably get an image 1 in. in height, with the 6 in. you get an image 1½ in., and with the 8 in. 2 in. in height. For a 9 in. lens the camera should rack out at least to 12 in. (3) The expression that has puzzled you means practically this, that with the full aperture of the lens the definition in the centre of the screen is sufficiently good for portraits and groups, but that to obtain sufficiently satisfactory definition at the edges of the plate, for landscape work the lens must be stopped down. Always glad to help you.

AMATEUR. — Tylar's metal slides may be fitted to Lancaster's cameras.

INSTANTOGRAM.—(1) When the gold is exhausted, the half-tones of the prints have a sickly greenish hue. (2) Glycerine, not gelatine, is used to prevent prints cockling, but its use is certainly not to be recommended with chloride papers. (3) The "Todd-Forret" lamp sold by A. H. Baird, 15, Lothian Street, Edinburgh, gives the more powerful light, and we prefer it to the one you name.

ECCLESIASTICAL. — Either the one you name, or Merlini's hand-camera with dark slides—the latter has rising front and swing back, hence useful for difficult interiors. Merlini, 34, Red Lion Street, Clerkenwell, E.C.

ABYDOS.—(1) We should prefer a longer focus lens of 5½ in., but the one you name is a very good instrument; you must not expect too much from the full aperture. (2) If you are satisfied with that focus, you could not get a better lens. (3) Yes. We have used a camera on this principle for over two years, and never found any want of sharpness from the cause you name. (4) You want clouds in your print, and it would be then a very good but not artistic shot.

J. FLEMING.—Keep all your solutions at as nearly the same temperature as you can. When does the frilling appear.

W. H. B.—Yes, the slides should be marked copyright, but not necessarily so, as to show on the screen. Probably the fact of the slide not being marked would reduce damages, even if it did not make suit null.

W. H. WHITTARD.—The ferrocyanide of uranium, which is the cause of the brown tone, is soluble in water, especially that containing a trace of alkali—therefore the remedy is to wash for about half an hour only, and in water slightly acidulated.

FOCAL LENGTH.—We should advise a rapid view lens of 10 in. focus, and a good landscape of 11 in. focus.

J. D. PEMBERTON.—Any of our readers are at liberty to send prints to be criticised.

TRIX.—(1) Local reduction is best managed with a wash leather over the top of the finger dipped in turpentine. To reduce locally by the aid of chemicals is not so easy; it is usually done on a half dry negative with the aid of a camel's hair brush. (2) The stops are not difficult to manage, and always included in the price. What are the difficulties?

P. C. L.—Stocke, Ironmonger, Rye, Sussex, is the address.

T. ARNOLD.—Eikonogen would certainly give you more transparent results than hydroquinone. You may be trying to obtain too large a disc, or the lamp may be defective, this is the most likely. What lamp is it?

BLANCHE.—The ordinary ferridcyanide and hypo is the best reducer before intensifying. The negative should be merely dipped in it so as to clear off the superficial fog, and then wash well before intensifying.

PLATINA.—Magnesium ribbon would be our choice about 12 in. according to density of negative burnt behind the ground glass, and kept moving about should give you the result you desire. Probably you are under-exposing with gas—black shadows point to this. Daylight can be used, but as it is so uncertain there is no estimating exposure.

C. JACKSON. — Robinson and Abney's "Silver Printing" is about the best book on the subject. To be had from our publishers.

E. M.—We start by saying that all your prints suffer from having been printed in the sun. (1) Too much foreground, and insufficiently toned. (2) Not enough foreground, and insufficiently toned. (3) Over-printed and over-toned. (4) Over-printed and under-toned. (5) Over-printed and over-toned. (6) Wants life, and under-toned.

W. E. A.—There is no finest printing process. You must suit your process to your negative. Possibly, however, photogravure is the best. Send us up some work, and we may help you further.

R. W. C.—The answer to your query is so long we are compelled to hold over till next week. The wet process is used, and iron developer.

F. J. CLARKE.—(1) Road. Technically very good, but why you could not raise the front and cut the lower foreground off we do not see. It would have been improved too by some figures issuing from the gate. In the bridge scene there is a possibility of improvement that the picture might have been taken the other way of plate. Technically it does not want improvement. We will write you by post.

J. B.—There is not the slightest doubt about the stain being almost ineradicable, nor of its disappearing and then coming back. The only way to prevent it is to place the plate in alum and citric acid after developing. Send us up a negative to look at and try.

V. R. I.—Your card received and will be duly attended to.

Sale and Exchange

RULES.

CHARGE.—Twelve *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* **2½** *per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.,** *or a commission of* **2½ per cent.,** *upon the sale price of the apparatus.*

Burnisher —Adams' 9 in Star burnisher, cost 14s. 6d., good condition, price 7s. 6d.; exchange.—Hare, Photographer, Sutton, Surrey.

Cameras, Lenses, etc.—For sale, a quarter-plate camera by Shew, with slides, and a splendid lens by Sands and Hunter, the set complete in a stiff waterproof case, price £3; a prize has been taken with this set.—Apply to J. Ramsden, Eton College, Windsor.

For sale, whole-plate mahogany box camera, two double dry plate backs, two single wet plate backs, and 12 by 10 single view lens, price 40s.—Elphick, 57, Stonefield Road, Hastings.

Dark room.—Overend's portable dark-room (outdoor), can be used indoors, sink, ruby and orange windows, shelf, etc., new in July, 35s., cost 50s.—Dr. Damman, 154, Walton Street, Oxford.

Electrical Apparatus. — Electric light, 4-cell battery, lamp, complete, for dark room, 30s.; two telephones, 12s., complete; other electrical apparatus. F. Hutchins, 66, Peckham Road, Camberwell.

Hand-Cameras, etc.—Large Kodak for sale, 4 by 5, including about 50 unexposed films, excellent order, only eighteen months in use, original price £10, will take £6.—Lady A., Forglen, Turriff, N.B.

Climax hand-camera by McGhie, Glasgow, fitted with Taylor lens, carries 12 plates, first class condition, cost in April (with camera case) £8 10s., will take £6 10s.—Norman Sloan, Crown Circus, Glasgow.

Adams' new Vesta pocket camera, quarter-plate, closes to only 1⅛ in. thick, and weighs, including slide, focussing screen, and two plates, 11b, Wray lens, 5in, five stops, adjustable focus, adjustable speed shutter, reversible finder and swing back, complete with three double slides and leather slung case, just bought for 7 guineas net, will take £6 10s. Any evening by appointment.—C., 11, Warwick Gardens, Kensington.

Quarter plate hand-camera, two view finders, six double slides, complete, 22s.; also Dallmeyer's quarter-plate triplet lens, 15s., or exchange for half-plate camera set.—S. Williams, Secretary L.E.C.C.C., 35, Silver Street, Leicester.

Lanterns, etc.—Biunial lantern, dissolving taps, safety jets, cog-wheel arrangement, cylinders, stands, nipples, unions, key regulators, screen 12 ft., case, 48 coloured slides (India), 7 Africa, £19.—B., 21, St. James' Street, Wandsworth Common.

Magnificent triple lantern by Steward, together with microscopic attachment and two aphengescopes, etc.; will take part exchange in electric apparatus, telescope, or engine models.—For full particulars, Lyddon, West Park, Clifton.

Lathe.—To be sold, an excellent lathe by Buck, 4ft. iron bed, 5in. centre, iron standards, over head motion by Evans, dividing plate, ornamental slide rest, compound side rest for metal, 3 jaw self-centering key chuck, drill, bell, and a many other chucks, eccentric and horizontal cutting instruments, a large assortment of tools for ivory, wood, and metal turning, price £35, a bargain Can be seen by appointment.—S., "Mayfield," Chase Road, Southgate, N.

Lenses, etc.—Lens, portrait and view, 8½ by 6½, works at *f*/4, brass mount, rackwork adjustment with double dark slide, 50s. On view, Burton's, 3, Broadway, Ludgate Hill.

Half-plate rapid rectilinear lens, with iris diaphragms, good as new, only 17s. 6d.; camera case, 5s.—Cheltenham House, Stroud.

Hockin's half-plate single lens case, Waterhouse stops, cost 8s., quite new, 5s.—J. Underwood, Devonshire Square, Loughborough.

Sets.—Chapman's whole plate camera, in waterproof case, swing back, rising and falling front, three double slides, Wray's R.R. lens, iris diaphragm, triangle top for stand, Thornton Pickard's instantaneous shutter, almost new, perfect condition, £12.—Mellor, Royhouse, Bolton.

Morley's light model half-plate camera, three double dark slides, tripod and case, complete, Hockin lens, splendid condition, £5 10s.—No. 350, office of this paper, 1, Creed Lane, E.C.

Quarter-plate hand and stand camera, three double mahogany book slides, view finder, and euryscope lens, working *f*/6, ash folding tripod and brass top for use with above doubly useful set; exchange safety bicycle or 12 by 10 R.R. lens. G. A. Knight, Seaford, Sussex.

Half-plate square leather bellows camera, two best double slides, all movements, and in new condition,

landscape lens, and mahogany stand with brass top; exchange safety bicycle, or good 12 by 10 R.R. lens.—G. A. Knight, Seaford, Sussex.

Relinquishing photography. £6 will purchase my half-plate camera, splendidly made, with three double dark slides, a whole-plate London Stereoscopic rapid landscape lens, long focus, Black Band series, in conical mount, splendid definition, Decoudun's photometer, and an Ashford patent folding tripod; the lot cost £10 5s.; I will send on approval on deposit.—Williams, Liberal Club, Saffron Walden.

Lancaster's quarter Instantograph, complete, four metal slides, adapter and screen to fit, also Chronolux shutter, exposures ½ to 3 sec, price £2 10s.—Apply, E. C. Davis, 23, Walker Street, Burdett Road, E.

Quarter-plate Optimus set, complete, perfect order, 35s.—Miss A. Jones, Chelmsford.

Lancaster's quarter-plate special brass-bound Instantograph, four slides, Optimus landscape lens, stand, bag, etc., new, never used.—5, Mill on Grove, Stockport.

Shutter.—Kershaw half plate shutter for sale, good condition, 6s.—Wall, Welstor, Ashburton.

Underwood's pneumatic drop shutter, 1¾in. hood, cost 5s., bargain 3s.—Underwood, Loughborough.

Stereoscopic Apparatus.—Two 4 in. Ross' P.S. lenses with iris diaphragm, paired for stereo work, £5 5s. the pair; two 6 in. do. do., £6 6s.; two 4½ in. Dallmeyer's 2a stereo landscape do., £2 15s.; Thornton-Pickard foreground stereo shutter, 20s; solid leather case for lenses and shutter, 6s.—Francke, St. Saviour's Road, Jersey.

Sundries.—I will exchange geared Facile bicycle, reversing handles, King road lamp, balls everywhere, splendid condition, can be seen by appointment, for half-plate camera outfit, or sell £5; Fallowfield's Facile hand-camera, used but once, as new, 25s., cost 73s.; Shew's Eclipse hand-camera, three double slides, and Shew lens, quarter-plate, 50s.—Young, 19, Lambourn Road, Clapham, S.W.

AMATEUR PHOTOGRAPHER, No. 192 to 273, and about 150 numbers, mostly later, price 4s. 6d.—D. B., 13, Marine Street, Bermondsey, S.E.

WANTED.

Enlarging Apparatus.—Enlarging apparatus for natural or artificial light, any make, must be cheap.—Lawther, Rochester, Otterburn, Northumberland.

Enlarging apparatus. Optimus preferred. Letters only.—C. E. Thorne, 19, Calabria Road, Highbury, N.

Hand-Cameras, etc.—Wanted, a good Facile or Shew's Eclipse hand-camera, quarter-plate. Send description, and state lowest price to Reingpach, Langham Hotel, London.

Wanted, hand-camera and good make, in exchange for seven vols. Shakespeare's plays, bound, quite new, cost 10s., or will sell for 8s.—G. Elphick, 57, Stonefield Road, Hastings, Sussex.

Lenses, etc.—Lens, Ross' whole-plate rapid symmetrical, exchange Tyler's Helioscopic lantern (new), 4-wick lamp, all best quality, about 20 slides, lock-up case.—J. Kirkpatrick, Omagh.

Sets.—Whole-plate set, complete, with R.R. lens; will give in exchange Lancaster's 1892 half-plate extra-special brass-bound set, and cash. Letters only, or apply after 7 p.m.—H. Swift, 21, Huxley Street, Queen's Park, Paddington.

Sundries.—Cassell's "Canaries and Cage Birds" (Blakston), coloured plates, as new, cost 35s. 6d.; "Work," from first issue up to date with two exceptions; over 100 numbers, to date, AMATEUR PHOTOGRAPHER. Exchange for quarter-plate enlarging lantern, or half-plate rapid rectilinear lens, or hand-camera. Particulars to W. Tremlett, 66, Ellacombe Church Road, Torquay.

Wanted, quarter or one-third plates, views of Carshalton Church and neighbourhood, or would buy negatives.—Leonard, London House, Carshalton.

Special Notice.—Stanley Show (Photographic Section), Agricultural Hall, from November 18th to 26th. To weekly readers of the four following advertisements, and to all whom it may concern. We intend to have the *brightest*, *biggest*, and *best* show in the exhibition. If you wish to see all the best things in the market, and everything up to date, don't fail to visit our stalls, which cover over 100 feet. City Salo and Exchange, 54, Lime Street, Leadenhall Street, City (late Goy's Medium).

Bargains in Lenses.—Wray's 10 by 8 narrow angle landscape lenses, 15 in., grand definition, iris stops, as new, £2 17s. 6d.; Wray's 10 by 8 to 15 by 12 wide-angle rectilinear, Waterhouse stops, as new, £4 4s.; 9 by 7 Optimus rapid euryscope lens, grand definition, Waterhouse stops, as new, £5 5s.; Ross' half-plate rapid symmetrical, as new, Waterhouse stops, £3 17s. 6d.; whole-plate rapid rectilinear by Charterhouse Stores, Waterhouse stops, best condition, 35s.; 5 by 4 rapid rectilinear lens, by Hancock, iris stops, fine definition, 22s. 6d.; Swift 5 by 4 wide-angle rectilinear, 5 in focus, rotating stops, 32s. 6d.; Dallmeyer portrait lens, c.d.v., grand definition, Waterhouse stops, finest order, 63s.; 7 by 5 Optimus rapid rectilinear, Waterhouse stops, as new, 42s. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Bargains in Hand Cameras.—Shew's 5 by 4 Universal hand-camera (folding), leather bellows, adjustable focus, fitted Swift's rapid paragon lens, Waterhouse stops, Thornton-Pickard shutter, three double slides, covered morocco, as new, £6 7s. 6d.; Blair's 5 by 4 hand-camera, good lens, time and instantaneous shutter, two finders, rack focussing, three double dark-slides as new, £3 3s.; Chadwick's quarter-plate "Practical" hand-camera, fitted R.R. lens, roller blind shutter, rack focussing, six patent Barnett slides, £3 12s. 6d.; Rouch's Eureka hand-camera, size 5 by 4, carries twelve plates, Rouch R.R. lens, finder, focusser, etc., covered leather, and in leather case, £4 17s. 6d.; Talmer No. 3, fitted with Euryscope lens, iris stops, two large finders, time and instantaneous shutter, lever focussing, as new, £5 5s.; Optimus Ubique hand camera, fitted Optimus R.R. lens, instantaneous shutter, three double slides, finder, adjustable focussing, £2 17s. 6d.; Kodak No. 1, best R.R. lens, carries 100 films, best order, in leather case, 40s.; McKellen's hand-camera, R.R. lens, shutter, carries 12 quarter-plates, covered leather, as new, 35s.; Beck's Frena hand camera, new packet films, latest pattern, £4 4s.; Samuel's hand-camera, 9 by 12 centimetre, rectilinear lens, time and instantaneous shutter in case, quite new, take 32s. 6d.; Fallowfield's Facile, fitted rapid rectilinear lens, carries twelve quarter-plates, as new, £3 17s. 6d. All above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium) Second hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Cameras and Sets.—Whole-plate Rouch patent camera, double extension, reversing back, etc., three double dark-slides, all brass bound, made for the tropics, fitted Wray's 10 by 8 narrow angle lens, iris stops, and solid leather case, grand lot, £7 7s.; Lancaster's half-plate Instantograph camera, moveable baseboard, view and landscape lens, iris stops, double slide, and folding stand, 37s. 6d.; half-plate Optimus "portable" folding camera, leather bellows, rising and falling front, good lens for views and portraits, two double book slides, mahogany plate box, and folding stand, take £2 17s 6d.; Optimus half-plate Rayment camera, reversing back, and all best movements, fitted rapid rectilinear lens, iris stops, three double slides, and three-fold stand, grand set, as new, £7 5s.; half-plate camera, by Houghton, all latest movements, grand article, fitted three double slides, rapid rectilinear lens, and double folding stand, £6 10s.; quarter-plate Lancaster's Merveilleux set complete, 15s.; Lancaster's quarter-plate Instantograph, finest order, all latest improvements, including camera, lens, iris stops, two double slides, stand and case, 37s. 6d.; 5 by 4 best quality camera, by Robinson, Regent Street, leather bellows, rising, falling, and cross front, wide-angle movement, three double slides, fine rapid rectilinear lens, by Robinson; Newman's shutter and Eastman's ¼-plate roll holder, quite new, £5 17s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Lanterns! Lanterns!! Lanterns!!! Slides! Slides!! Slides!!! The largest and most varied selection in the whole kingdom. Before selecting elsewhere, call and inspect the stock of the City Sale and Exchange, 54, Lime Street, Leadenhall Street, City, where we have no hesitation in saying you will find all that you require in this way. Lanterns for sale, lanterns lent on hire, lanterns sold on commission, or taken in exchange for other apparatus. Write for special supplemental lists, Manager, City Sale and Exchange, as above.

Magic Lanterns and Slides. — Walter Tyler's Helioscopic is perfection of all lanterns, supplied to Indian Government, School Boards, science classes, clergy, and exhibitors throughout the world. Impossible to have lanterns give better definition or more satisfactory results; specially constructed lens, which no other lantern possesses.—Walter Tyler, 48, Waterloo Road, London.

Walter Tyler's Best Triples and Biunials are unsurpassed, and perfect in every detail. Good biunials, mahogany bodied, brass fronts, and all improvements, £7 10s.; single lantern, with 4 in. condensers, portrait front lens, 4-wick lamp, complete, in case, 27s. 6d.—Walter Tyler, 48, Waterloo Road, London.

Lantern Lenses.—Specially constructed. Walter Tyler's new Helioscopic portrait combination lantern lens gives the most perfect definition and brilliancy, can be fitted to any lantern, and for excellence cannot be surpassed. No other maker has this lens, which is manufactured expressly for Walter Tyler, Waterloo Road, London.

Regulators and Gauges.—Great reduction, in price. Either can now be had of Walter Tyler for 14s. each. The largest stock of gas cylinders in England. Best seamless steel, tested and valved, and all sizes at very low prices.

Slides from Negatives and Pictures —Walter Tyler manufactures and colours slides on the premises, thus ensuring speedy delivery, and prices are most moderate.—Walter Tyler, 48, Waterloo Road, London.

Biunial Lanterns.—If you are in want of a really good biunial lantern, perfect in every respect, call and see Walter Tyler's entire brass fronted, mahogany-bodied, lined with Russian iron, and fitted with new best quality lenses, and sold at a most moderate price. The top lantern will take a 4-wick lamp. These are great bargains.—Walter Tyler, 48, Waterloo Road, London.

Hire Department is now perfect. Largest and best collection of slides in the world; over 200,000 always in stock. Temperance, travels, Scripture, educational, comic, tales, etc. Cheaper than any other house, no extra charge for coloured slides or effects. Special terms for large quantities.—Walter Tyler, 48, Waterloo Road, London.

Lanterns and Slides.—If you wish to hire, purchase, or exchange, you cannot possibly do better than go to Walter Tyler, who makes this business a specialite, and you will thus save dealer's and all intermediate profits.—Walter Tyler, 48, Waterloo Road, London.

Second-hand Lanterns and Slides at very moderate prices, also all kinds of apparatus. Send for large catalogue, 420 pages, with instructions for working lanterns of all kinds, and costing an immense sum to produce, sent free for 6 stamps. Small catalogue and second-hand list, post free.—Walter Tyler, 48, Waterloo Road, London.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

ENLARGING APPARATUS.—Hume's enlarging apparatus, 5 in. condenser, without objective, 61s. 6d.; with 8 in. condenser, 122s. 6d., carriage paid.—Hume, 1, West College Street, Edinburgh.

COLLOTYPE Printing for Amateurs or Trade, also Instruction given in Collotype or Zinco through post or by appointment.—Lingard, 2, Holmes Street, Derby.

WANTED.—Gentleman with £50 to join advertiser in Suburban Business. Half profits and taught profession. Takings since April, £100. Capable of great extension. Thoroughly good chance. Investigation invited. Apply personally, if possible.—Windsor Studio, Sutton, Surrey.

THE BOOK OF THE LANTERN

BY T. C. HEPWORTH, F.C.S.

A Practical Guide to the Working of the Optical (or Magic) Lantern—either as an Educational Instrument, for Exhibition Purposes, or as an Enlarging Apparatus for Photographers. With full and precise Directions for Making and Colouring Lantern Pictures. Price 3s. 6d., post free.

"Here we have something like a lantern manual! A handsomely bound, comprehensive work, written by an acknowledged master in lantern operations."—*Photographic News.*

"Comprehensive, and is characterised by an excellent literary style."—*British Journal of Photography.*

"It is without exception the best book that has been published."—*The Amateur Photographer.*

London: HAZELL, WATSON, & VINEY, LD.,
1, Creed Lane, Ludgate Hill, E.C.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 423. Vol. XVI.] FRIDAY, NOVEMBER 11, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

Our Views.—"Photomnibus" Competition—Phot. Soc. India Exhibition — The P. B. A. and Hollyer's Exhibition—Our Illustration—The Stanley Diploma of Merit—The Stanley Show—Photography and Cycling—The Classes—The Judges—Art and Strange Yoke-fellows — Mr. Van der Weyde and *Black and White*—Mr. Davison and his Criticism—Mr. Greger and his Champion — Rough-surface papers and large sizes — Large Work not Direct Work—Leytonstone and Hackney Exhibitions — Van der Weyde's Photo-Corrector — The New Cold-Bath Platinotype Paper—The Thirsk Disaster Stereograms.

Chit-Chat, by Chatterbox.

Letters to the Editor. — Medal Hunters (Tylee, Wilkinson, M. M. E.)—Noxinol (Wright)—The World's Fair (Beach)—Toning Bath (Mason)—Hints on Posing (Posing)—Intensifying Lantern Slides with Silver (Brown)—The P. B. A. (Snowden Ward).

Articles.—Photographic Procedure (Wall)—The Object of Photography (Barnes)—The Reflection of Light—Outdoor and Winter Photography—A Dark-Room (Anderson)—To Arcadia with a Camera (Harvey).

Apparatus.—Optimus Artificial Light Enlarging Apparatus — Butcher's Lantern Novelties—Mezzotype Paper—Brun's Glossy Colours—Tylar's Lantern Slide Printing Frame.

Catalogue.—Fallowfield's Remembrancer.

Review.—The Lantern Slide Manual (Hodge).

Illustrated Supplement.

Societies' Notes.

Exhibitions.

Societies' Meetings.—Barrow—Blackheath—Croydon — Croydon Microscopical—Hackney—Holborn—Huddersfield—Kensington and Bayswater—Lewes — Lewisham—Liverpool—London and Provincial—Llanelly—North Surrey — Oxford — Putney—Richmond—Rotherham — Sheffield — South Manchester — West Surrey.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom	Six Months, 5s. 6d.	Twelve Months,	10s. 10d.
Postal Union	" " 6s. 6d.	" "	13s. 0d.
Out of Postal Union	" " 7s. 9d.	" "	15s. 3d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 42.—"Sea Pieces and River Scenery." Latest day, November 21st.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, December 9th.)

With reference to our reminder (on page 298) of Messrs. Wormald and Co.'s second "Photomnibus" (Pin-hole) Competition, we are now enabled to announce the prize winners as follows:—

First prize, £2 2s., awarded to W. L. F. Wastell, Fuller's Road, S. Woodford, Essex, for photograph of a "Group of China." Second prize, £1 1s., awarded to Henry Staynes, 41, Avenue Road, Clapton, N.E., for photograph of "Harold's Bridge," near Waltham Abbey. Third prize, 10s. 6d., awarded to Frank W. Robinson (age thirteen), 140, High Street, Lewes, Sussex, for his photograph of "Hamsey Bridge," on the Ouse, Sussex.

We understand the prize and other pictures will be on view at the following exhibitions:—Leytonstone Camera Club, 10th to 12th November; Hackney Photographic Society, 15th to 17th November; South London (Peckham) Society, 24th to 26th November.

The next (third) "Photomnibus" competition is returnable on June 30th, 1893, when the same prizes are to be repeated.

The fifth annual exhibition of the Photographic Society of India will be held in Calcutta early in December. The exhibition will embrace every branch of art and manufacture connected with photography, and will thus afford to those who make a study of the art-science, whether professionally or otherwise, an opportunity of becoming acquainted with all the most recent improvements and developments introduced by home and foreign firms. Provided the judges deem the exhibits of sufficient merit, the following medals will be awarded, viz., five gold medals, fifteen silver medals, and fifteen bronze medals. Of these some will be reserved as follows:—For professionals of the world, one gold medal; for amateurs of the world, one gold medal, five silver medals, and five bronze medals; for amateurs of India and Burma and amateur members of the Photographic Society of India, one gold medal, five silver medals, and five bronze medals. In addition to the above, a special medal will be given for the best photograph in the exhibition.

It is proposed, provided they fill, to medal the best in each of the following classes:—Class 1, landscapes, architecture, and interiors; Class 2, portraits and groups; Class 3, genre pictures and studies; Class 4, photographs of objects in motion; Class 5, lantern-slides; Class 6, photo-mechanical processes; Class 7, apparatus and appliances.

No exhibitor is to be allowed to take more than one gold medal.

The undermentioned gentlemen, elected by the members of the society to act as judges, have consented to serve:—The Hon. Sir Comer Petherham, Q.C., Chief Justice of Bengal; Colonel J. Waterhouse, S.C., Assistant, Surveyor-General of India; Colonel M. W. Rogers, R.E., Assistant, Surveyor-General of India; Mr. W. H. Jobbins, Superintendent, Government School of Art, Calcutta. There will be no appeal from the decision of the judges.

Photographic lantern-slides will be shown by means of the society's optical lantern during the exhibition. The loan of slides for this purpose is invited; they must not exceed 3¼ inches in height, and, to enable the committee to select and arrange them, must be delivered not less than one week before the opening of the exhibition.

THE Photographers' Benevolent Association, or P.B.A., as it is irreverently called, is in luck's way this year. The entire receipts of Mr. Fred Hollyer's exhibition of prints, now on view at the Dudley Gallery, will, on the last day, the 12th inst., be handed over to the above Association, as also the proceeds of the catalogues. Our readers can now kill two good birds with one stone, namely, go and learn a good lesson from Mr. Hollyer's work, and help the P.B.A. as well.



MR. MASKELL'S first lecture and demonstration in Paris on Monday last on Platinotype and kindred photographic subjects appears to have given great satisfaction, and was well received. The experiments in printing by the light of the oxy-magnesium lamp were particularly well appreciated.

OUR illustration this week represents the results of a railway accident at Spring Gardens Junction, Barnard Castle and Bishop Auckland branch, North-Eastern Railway, on October 1st. One line has been completely torn up, and the trucks are piled up in great confusion.

A most artistically designed diploma of merit is being given in the photographic competition promoted by the Stanley Cycling Club, at the Royal Agricultural Hall. The right-hand side of the diploma is occupied by the figure of Fame; on the left-hand is a figure emblematic of photography, and a cyclist, with a camera and other photographic paraphernalia attached to his machine, occupies the centre. We understand a copy of the diploma will be presented with each medal awarded, in addition to those presented separately.

THE new photographic exhibition and competition, promoted by the Stanley Cycling Club, in connection with the Stanley Show, which takes place at the Royal Agricultural Hall from 18th to 26th inst., promises to be very successful. Sir Albert K. Rollit, M.P., opens the exhibition at noon on Friday, the 18th inst. Among the firms exhibiting photographic apparatus are Messrs. R. and J. Beck, B. J. Edwards and Co., Sands, Hunter and Co., Dallmeyer and Co., Lonsdale Bros., City Sale and Exchange Rooms, Elliott and Sons, W. Wray, Platt and Witte, Morley and Cooper, Autotype Co., A. and J. Smith and Co., H. Park, and others. The picture competition and the attractive list of entertainments, combined with the conveniently accessible location of the exhibition, should ensure its being a great success.

OF late years cycling and photography have in a measure gone hand in hand, and so at the Stanley Show there has been each year an increasing contribution of photographs and photographic apparatus, until now the executive have deemed it advisable to make special provision for a competitive exhibition of pictures, as well as apparatus and appliances, and no doubt the Committee of Management are actuated by a desire to meet the tastes of the average cyclist more than anything else, otherwise some of the rules and conditions seem a good deal out of harmony with contemporary photographic ideas, and are not calculated to evoke the sympathy of the serious and advanced workers.

IN the first place the five classes will seem to many particularly inadequate; thus Class A, *Instantaneous Cycling Subjects* (sets of four), and Class B, *Instantaneous General Subjects* (sets of four), will be surely rather difficult to divide. "Cycling subjects," at least, seems to demand a little explanatory definition, but none is forthcoming. Class E is for "*Pictures by Platinotype Process* (any subject)." Why wasn't there a class for "Pictures taken on Ilford Plates," or "with Ross's R.R. lens, *f*/32"? Surely it would be as rational.

THE judges are Messrs. J. Traill Taylor, Henry Sturmey, and Andrew Pringle, and we note that in all fifteen medals are placed "at the disposal of the judges for artistic and technical excellence." No offence, good sirs, but will you who are so eminent in sciences and sports also assume the rôle of art critics? Look to it, ye artists in monochrome!—the simple photograph which cost you so much patient care and thought, and which your painter friend applauded, is to be subjected to the analysis of the expert in optics, the bacteriologist, the genial tourist and scribe. "Duplicate prints of prize-winning pictures are to be furnished to the Stanley C.C." Evidently those who framed the regulations are under the impression that photographs are but machine-made pictures which can be turned out by the dozen. Had they ever set themselves the task of pro-

ducing a picture from two or three negatives, conscientiously aiming at a definite effect, they would probably regard less lightly the production of a "duplicate print."

Well, we wish the Stanley Show all legitimate success, but doubt the advisability of dragging in the artistic. Surely art in our days is forced to find strange yoke-fellows, and now it is to be associated with pneumatic tyres, safety brakes and the like. Even "artistic snap shot" competitions do not seem wholly satisfactory in result, to judge from the amount of controversial correspondence which sometimes follow.

Amongst the many Christmas supplement plates which are just now enlivening the appearance of railway bookstalls and newspaper shops, we are pleased to notice one very pleasant picture which bears a signature well known in photographic circles, that of Henry Van der Weyde. It is the Christmas picture of *Black and White*, and is from an original pastel by Mr. Van der Weyde, copied by photography. It needed not this additional proof of the artistic ability of the author of the Photo Corrector and other works.

Last week, in the columns of a contemporary, Mr. George Davison, the writer of a leading article in which certain Pall Mall pictures were instanced as examples of errors in cloud combining, replies to Mr. Karl Greger's defence in no uncertain phrases, and thinks this gentleman's pictures "were the most glaring examples of inconsistencies shown in any of the pictures at Pall Mall worthy of criticism and examination." The last five words of the sentence are of a very qualifying nature, for there were probably very few pictures which the critic in question thought "worthy," and Mr. G. Davison is never too lenient when he thinks he has found a fault.

So far this is very well, and we have no doubt that Mr. Greger will take the criticism in good part, and value it more, perhaps, than his self-constituted champion who in the same contemporary's correspondence pages uses "the supposed faults in others," to wit, Greger, Bedford, Gale, etc., as a foil wherewith to thrust at Mr. Davison. Is it that some old sore has been long rankling in his gentle bosom? Strange how combativeness is developed in some constitutions. Some folks will rush in where angels fear to tread.

With the increasing use of rough-surfaced papers and brown "tones," may be noticed a greater tendency towards large sizes—not but what the name of quarter-plates is legion, and probably always will be so long as hand-cameraism is a fashionable craze—but the middle sizes of half-plate and thereabouts seem to be much rarer in the present day exhibitions than formerly. Probably this is to some extent accountable to a more widespread desire to make "pictures," and because with broader methods of treatment large prints come more naturally than if microscopical definition were practised, and close inspection of minute details necessary. It is, however, to be feared that "press notices" have had a baneful effect in this direction, the craving for notoriety and an exaggerated notion of the superior attractiveness of large pictures. It is said that a certain Hon. Secretary wants to quarrel with someone as to whether as much great art cannot be got on a postage stamp as on a whole-wall fresco. We are not sure whether Messrs. Elliott and Son's "Wave Study" of this year beats previous records in point of size, but it is to be hoped that not many exhibitors will emulate these, mammoth achievements, else the P.S.G.B. may be expected to become the successors of Imre Kiralfi's Venice as tenants of "Olympia."

From all one can learn, and some exhibitors are not too communicative as to their methods of working, the large pictures are by no means chiefly what are known as "direct" photographs, but the results of making enlarged negatives, the best things being obtained with a carbon transparency made from the original negative and then enlarged in the usual manner. In the forthcoming exhibitions which are announced in our columns, a good deal of this kind of work will, we understand, be seen.

Our friends at Leytonstone and at Hackney, whose exhibitions will be noticed in next week's issue, are by no means content to trust to the mere display of photographs to "draw" the public, but have arranged quite elaborate programmes for each evening. At the former there will be half-hourly events in the form of lecturettes, music, etc., and the latter will so far indulge popular taste as to introduce theatricals in the form of a comedietta entitled "Amateur Photography, and what Came of It."

Both the above exhibitions are being worked most enthusiastically, and success in each case is pretty well ensured.

That in photography the artist is the slave of circumstances, the machine and his materials, and that for this reason it cannot be ranked as a creative art, is a reproach likely to be removed so soon as such methods of altering the original subject as Mr. Van der Weyde's patent promises, and Mr. Willis's latest platinotype process are thoroughly known and understood and practised.

As was announced in reviewing the Camera Club Exhibition, Mr. Van der Weyde has patented a method which he calls the "Photo Corrector," whereby he is able to modify, change, and in such manner control the relative parts of his model that practically out of an ill-proportioned figure he can construct on the photographic plate the form of an Apollo or the perfect symmetry of the classic Venus. The feature which is undesirably prominent he can suppress, and exalt others, according to the dictates of the operator's artistic taste. This power alone in proper hands might be enough to give photography a new position and to revolutionise its entire status.

But with it is the "New Cold Bath" paper of the Platinotype Co., now generally known, but, as we think, not fully appreciated; and although what is known as the Glycerine Development has been pretty freely spoken of and described, we find comparatively few know what its advantages are, or what an enormous artistic power this method places in their hands, so that we have jotted down without any claim to originality our own procedure when a few weeks ago we for the first time essayed to put into practice the hints we had gathered, and were happy in producing what we considered a very satisfactory print from a negative which had hitherto defied our efforts with any other printing process.

From Mr. J. E. Ellam, the Hon. Secretary of the Stockton Photo. Soc., we have received some stereograms of the Thirsk disaster, one of which we shall hope to reproduce.

Chit-Chat.

IN his last article upon "Field Photography" Mr. Hinton strikes at the root of the principal shortcoming of photography viewed as a graphic art, *i.e.*, its failure in representing the true tonality of the subject. It is well that the unthinking and careless should have this fact brought home to them, but if Mr. Hinton could go a step further and show how this photographic falsification of nature could be avoided, he would do more for photography than man has yet done. The practical solution of the difficulty will probably be found in further improvements, which yet remain to be discovered, in colour-sensitive plates.

THE thanks of your readers who are unacquainted with the German language (in which category, by the way, I must include myself) are due to you, Mr. Editor, for your translation of Professor Watzek's and Herr Haschek's articles upon "Spectacle Lenses." From a few hasty experiments of my own, and an inspection of some more thoughtful work so produced by others, I am led to the belief that the method will prove exceedingly valuable in certain branches of work, notably for large heads and studies of the human figure. A diffused softness of effect is produced difficult to obtain by other means.

"*Everything I say is right; if you do not believe it now, you will when you grow wiser!*"

WHEN will the craze for new developers cease? The latest, which has been christened "Mixtol," contains no less than *nine* ingredients. Surely "Mixed-all" would be a more appropriate designation. Notwithstanding its competitors, pyro remains the best all-round developer extant, and is still used by almost all *practical* men. If beginners would learn to appreciate this fact, their work would be better and their difficulties fewer.

WHY, Sir, do you and your brother editors devote space which could be far more usefully occupied, to the so-called reports of Society Meetings? I like to read a good report, I confess, but few of those to whom the duty is assigned appear to understand the art of reporting. I can understand Brown, Jones, and Robinson liking to see their names in print, but why should their gratification be considered at the expense of the mass of your readers?

WHAT edification is there for the general reader in the statement that "The Cribbing Camera Club" met on the 1st inst. when Mr. Bore, the President, gave an address in his usual monotonous and heavy style. Mr. Smart said he thought he had heard the same statements before, and the President in reply said that that was probably so, as, in a laudable endeavour to maintain the tradition of the club, he had copied his remarks from previously published addresses. The Secretary then announced that Mr. Emulsion would attend on the 14th to describe his own productions, when he hoped there would be a good attendance, as Mr. Emulsion had promised to present free samples of plates to all present. The Secretary also said that he had received a quart of the new developer "Fogemall," which he said he had taken home to try. After some discussion upon the propriety of such a proceeding on the part of the Secretary, the meeting was adjourned.

SERIOUSLY, Mr. Editor, I think this question is well worthy of consideration, and I for one shall be glad to hear the opinions of your readers upon it. CHATTERBOX.

Letters to the Editor.

NOXINOL.

SIR,—We think, perhaps, that the following experiments made just recently by Mr. A. Bently Smith, of 189, Maida Vale, would certainly be of interest to your many readers.

Mr. Smith exposed an ordinary Ilford plate under usual conditions. Afterwards in the dark-room he cut the plate in two portions. The first half he introduced into a developing bath (hydroquinone) containing about half an inch in depth of developing solution, to which had been added a small quantity of our Noxinol.

The tray was then placed on a chair in the broad daylight out of doors (time, 12.50) for three minutes, during which time the progress of the development was followed with the greatest clearness. A bright sun was shining, but the chair on which the developing tray was standing was placed in the shade. When the development was completed this half portion of the plate was taken into the dark-room and fixed. Then the second half of the plate was subjected to exactly the same treatment under precisely the same conditions, but without any Noxinol being added to the developer. The result of the latter test may be easily imagined. Mr. Smith, of course, obtained a black impenetrable film without the slightest trace of any image, whereas the first half which had gone through the same fire of this most heroic ordeal came out without any sign of fogging whatever.

These experiments only independently corroborate our own investigations with Noxinol before we offered to the public a product which may in our advertisement appear to be somewhat exaggerated to those who have not had any experience as to the remarkable results that can be obtained with its use.—Yours truly, G. WRIGHT AND CO.

* * * *

THE WORLD'S FAIR.

SIR,—I enclose a copy of the official letter just received from Chicago in regard to the photographic privilege at the World's Columbian Exposition, which may interest many of your readers. The spelling of word "stereoscopic" is just as it is in the letter.

By agitation and concerted movement the amateurs of America have thus been successful in changing the sentiment of the authorities, which was at first strongly against the admittance of any camera, and I desire to express through the medium of your valuable journal my sincere thanks to all of our foreign friends and societies for the aid they so kindly gave us. The minor restrictions that now appear may be removed by the time the exhibition opens.—Yours, etc., F. C. BEACH.

"The World's Columbian Exposition, C. D. Arnold, Official Photographer.
"Office of D. H. Burnham, Director of Works, World's Columbian Exposition, Jackson Park, Chicago, Ill.
"October 25th, 1892.

"*American Amateur Photographer*, 239, 5th Avenue.

"GENTLEMEN,—Hand-cameras using plates up to and including 4 by 5 in. without tripods, will be allowed within the grounds of the World's Columbian Exposition on and after this date, on payment of a fee of two dollars in addition to the regular price of admission for each day.

"Cameras using *steoscopic* lenses will not be admitted, however small the plate may be.—Very sincerely,
"C. D. ARNOLD (Official Photographer)."

* * * *

TONING BATH.

SIR,—I beg to thank those readers of the AMATEUR PHOTOGRAPHER who, having tried my new toning bath, have given their experience with the same; I also offer you some further notes on the subject.

First, as to my own experience.

The bath I first made (some months ago now) I am working with to-day. The proportions were exactly the same as published, and after toning about two dozen prints, I also was bothered with the pink tones. I filtered the solution and returned it into its bottle. I next made up:—

Sodium chloride	64 gr.
Ammonia sulphocyanide	15 „
Water	2 oz.

This I placed along with the bath I had been using. Next day I tried the bath again, but only added 1 gr. gold chlor., and found the bath worked to perfection.

I now add gold chlor. 1½ gr. for every sheet to be toned, and the above solution of salt and amm. sulph. as needed, viz., whenever the bath begins to work slow, or when the pink tones appear. Gold may be added any time during toning.

For Eastman's paper (my experience has been entirely with Ilford) I would suggest using 100 gr. salt (or more) per 10 oz. of solution.

I have not been troubled with acidity, or yellowing of prints, but I think it would be caused by using common or very acid gold chloride.

I can get any tone, from sepia to deep warm black, and have never had a single case of uneven toning.

Perhaps your readers may be more successful with the following:—

Sodium chloride (salt)	80 gr.
Ammonia sulphocyanide	15 „
Gold chloride	1½ „
Water	10 oz.

Used the same way as bath in No. 417, p. 225.—Yours, etc.,

ED. MASON.

* * * *

"HINTS ON POSING."

SIR,—As an amateur I am much indebted to your paper for various bits of information which have appeared in its columns of late, and I cannot help making remarks upon the same. I am sure it gives credit to such persons as Mr. Rentzch to favour the amateur with such information as appears in this week's AMATEUR PHOTOGRAPHER. I cannot help thanking Mr. Rentzch for his "Hints on Posing." As I have a group to take and was somewhat in a maze as to the proper way of fixing, I should be much obliged to Mr. Rentzch if he could further such information more in detail, or state some particular book which treats on the subject. Thanking him in anticipation for such valuable and practical information.—Yours, etc.,

POSING.

NOTE.—The "hints" were extracted by us from a report of the Foochow (China) Camera Club, and Mr. Rentzch will hardly have time to send us a reply within the next month or two. H. P. Robinson's book, "The Studio, and what to Do in it," price 2s. 6d., is the authority on the subject.—EDITOR

* * * *

INTENSIFYING LANTERN-SLIDES WITH SILVER.

SIR,—In a paper read before the London and Provincial Photographic Association, and given in your issue of the 28th ult., Mr. George T. Harris gives it as his experience that it is possible—nay even easy—to intensify gelatine lantern-slides with the old collodion acid silver intensifier. A process of that sort is a great boon to the lantern-slide maker who is in the habit of preparing slides from book illustrations, in many of which there is little enough contrast. On seeing Mr. Harris's paper I tried the process. I made my silver solution according to his formula, using distilled water. On mixing it with the pyro solution I got a white precipitate which dissolved slightly in excess of the sulpho-pyrogallol. I added the silver till I got a permanent precipitate, filtered it off, and used the filtrate for the intensification process. It intensified considerably a lantern-slide that had been freed from hypo by washing in running water for twelve hours. The process was rather slow, taking perhaps a quarter of an hour. The lights of the lantern-slide remained clear. Now what I should like to ask is this, is Mr. Harris's paper correctly reported when it says that one or two minims of the acid silver solution are to be added to half a dram of the usual 10 per cent. sulpho-pyrogallol? Should it not read that half a dram of the sulpho-pyrogallol be contained in the ounce of water? I am sure that the experience of your readers on this subject would be valuable, and perhaps Mr. Harris will be good enough to tell us how he avoids the formation of a precipitate when mixing the intensifier. I do not think the precipitate is silver chloride, since the sulpho-pyrogallol was made up in distilled water.—Yours, etc.,

G. E. BROWN.

* * * *

MEDAL HUNTERS.

SIR,—Being a recipient of the following awards in the recent exhibition of the East London Photographic Society—first medal in open class, special medal and challenge cup for best picture in the exhibition, first medal in "landscapes," "river scenery,' "portraiture," "instantaneous," and "architecture," and third certificate in "landscape" and "instantaneous"—I wish to say a few words in reply to your remarks in last week's issue.

I was one of the first to join the E. L. P. S. upon its formation in April, 1891, being at that time quite a beginner in photography.

I quite agree with you that one man should not be allowed to sweep the boards, but at the same time I may inform you that previous to our exhibition in 1891 I proposed and was fortunate enough to carry, one man one prize only, the next best to follow up in succession. Through this proposition being carried, myself and others encountered a storm of remarks, from one or two in particular who received a higher prize than the picture was thought worthy of at the close of the first exhibition.

It was then decided to make new exhibition rules to obviate a second experience of the same thing. Now we come to our recent exhibition to which you refer, and in which I competed, considering myself only a third-rate worker at the result of last year's work.

If my memory does not fail me, our present rules run thus:—"That in the event of one member receiving more than one award of equivalent value the same to be inscribed upon one medal, and in the event of a member receiving more than one award in one class, the first will be awarded and the second, as the case may be, will be withheld." Speaking financially, the Society only has benefited by me sweeping the boards; and not myself, regarding the number of medals I receive, as I only receive one bronze medal for four first and two third awards.

I trust our worthy Hon. Sec., Mr. Wilkinson, who has received one first and four second awards, and will receive but one large bronze and one small, upon seeing this will forward you a copy of our exhibition rules, as I am sure you have not been acquainted with them, judging from the reading of last week's issue.

The question now arises as to whether or not one bronze medal is of sufficient interest to try and sweep the boards for.—Yours, etc.,

CHARLES TYLEE.

SIR,—Referring to your note in your last issue, relating to the rules of competition of the East London Photographic Society, I think you are under some misapprehension, and that your remarks are likely to reflect unwisdom on the part of the committee.

The principle which guided the committee throughout, was that every member should have what he earns, with this provision: in the event of a competitor earning an equivalent prize in more than one class, *only one medal* would be given, bearing the inscription of the classes in which he was successful. If it were otherwise, as you seem to favour, that a prize winner in one class should be debarred from taking a prize in another class competitors fourth or fifth in order of merit would obtain the first prize in some cases. I could quote an instance in which this really was the case. This I think, you will agree, is grossly unfair. If you would kindly publish this letter, possibly other readers of your admirable journal will ventilate their views on the subject.—Yours, etc,

M. M. E.

SIR,—With reference to your views *re* distribution of medals, I beg to call your attention to the rules regarding same in the East London Photographic Society, viz., That in the event of a member earning more than one award in one class, the first will be awarded and the second or third withheld; and in the event of a member earning more than one award of equivalent value, the same shall be inscribed upon one award.

In our recent exhibition it so happened that one member received no less than four first and two third awards, and I myself received one first and four seconds in the various classes for competition amongst the members, so that according to exhibition rules the member mentioned above will only receive *one medal* containing the inscriptions of the other three awards, the two thirds are withheld on account of being in the same classes in which he receives the first awards. In my own case I receive two medals, viz., one first and one second, containing four inscriptions.

Under these circumstances, I do not consider it worth a member's while to enter with the idea of *sweeping the boards*, neither can I see why he should receive the title of *medal hunter*.—Yours, etc.,

M. A. WILKINSON
(Hon. Sec., E. L. P. S.)

We may state that our remarks were not levelled at one exhibitor in particular. The rule of the East London Phot. Soc. would obviously prevent medal hunting. At the same time we think that as all society exhibitions are presumably for the encouragement of young workers there should be some limitation as to one member taking all the first places. If the East London or any society's rules provide that in the case of any member winning two firsts he shall have one medal and two inscriptions, and the medal in the second case shall be passed on to the next competitor, all well and good. If not, then the position remains the same, namely, one competitor may sweep the board, and the society is in pocket by the non-awarding of medals, and the other competitors have not the slightest chance against the champion worker, who, in somewhat analogous hobbies, cycling, running, etc., would be handicapped heavily. We shall be very pleased to hear what any of our readers have to say, only please take the principle—not individual cases.—EDITOR.

* * * *

THE PHOTOGRAPHERS' BENEVOLENT ASSOCIATION.

SIR,—I am pleased to say that my letter in the last week's papers has brought one or two offers from employers which have enabled us to fit good men into situations. I have one offer which is rather peculiar. A gentleman who has a good portable saloon studio, which he has worked profitably both winter and summer up to the present, but which he is now working in the summer time only, and settling in a small town during the winter, offers to let it to a thoroughly reliable man on condition that he will retouch a few negatives for the owner, and hand him as rent all money taken over 30s. per week. As I have a very great number of assistants on my books, any one of whom might be willing to entertain this offer, I ask you to let me make it public through your medium, which will save me an immense amount of correspondence. One employer says that he supposes we have only "lame ducks" on our books, and others seem to have this notion. This is quite a mistake, for we have the addresses of operators and retouchers, managers, and others, who are only just out of best berths, for the men whose names are on the Employment Bureau are in no way connected with those who apply to the Benevolent for monetary assistance.—I am, yours, etc., H. SNOWDEN WARD, Hon. Secretary.

Memorial Hall, E.C.

Walton Phot Soc.—Ordinary meeting on the 2nd inst., Mr. J. Kennedy in the chair. The President announced that the evening would be devoted to the second lantern-slide competition held by the society. There were seven members who competed with sets of six slides. The slides sent in show some very excellent and careful work. Mr. F. Murphy and Mr. John Parke kindly consented to act as judges. After all the competition slides were passed through the lantern, the judges then retired and consulted together. Upon the judges returning they announced that "Red Centre" had won the first prize, and "Red Spot" had won the second prize. Upon the respective envelopes being opened it was found that Mr. George Latimer was first, and Mr. Henry Shurrock was second. After the competition slides were finished several members brought extra slides, which were passed through Mr. Kennedy's lantern. The President announced that the subject for the next meeting (Dec. 7th) would be "The Ferricyanide Process," by Mr. H. E. Burn.

The Largest Photograph.—Baltimore will have the distinction of presenting to public view in her Columbian parade the largest photograph in the world in the shape of a picture 9 feet long and 6 feet high, of "Columbus before Ferdinand and Isabella," after V. Gribayedoff's engraving of Brozik's celebrated painting. This photographic feat will constitute the float of St. Pius' Parish in the parade, and will be furthermore unique as the pioneer experiment of adapting photography to this purpose. The idea originated with Mr. William H. Weaver, of Weaver and Son, No. 1,151, East Baltimore Street, an artist of recognised ability, to whom the whole design for the float was entrusted. The design is remarkable for its artistic grace and beauty. The two colossal pictures on either side of the float will be framed in ornamental panels, also photographed, taken from the representation of "Columbus before the Council," on the bronze doors of the Capitol at Washington, the work of Randolph Rogers. Surmounting the float is half of the globe, on the summit of which stands Columbus and his two captains, catching the first glimpse of the New World, one eagerly pointing to land, and the other as eagerly gazing towards the goal of their hopes, while the great discoverer himself stands wrapt in a silent ecstacy of grateful prayer. These figures will be in relief, about 5 feet in height. Great dragons, with twisted bodies, their tails curving upwards, support the four corners, and at the end is to be a large photograph of Cardinal Gibbons. Four strong lights within the float will illuminate the pictures, thus making them splendidly effective and bringing out every perfection of detail and finish.

Photographic Procedure.

BY E. J. WALL.

(*Author of "The Dictionary of Photography."*)

SECTION VI.

DEVELOPERS AND DEVELOPMENT.

(*Continued from page* 260.)

Pyro and Fixed Alkalis.—To many operators the fumes of ammonia are offensive and even harmful, and therefore the fixed alkaline carbonates are used. In America the fixed alkalis are nearly always used, and undoubtedly in England they are steadily gaining favour.

The alkaline carbonates used are those of potash and soda, and it will not be out of place to briefly call attention to these salts. The carbonate of potash which should be used is the pure, known to chemists and dealers as Potassii carbonas P.B. A still purer kind may be had, but as this is of an excessive price it is not worth the extra cost. Carbonate of soda is made in several degrees of purity, the commonest, cheapest, and most impure being the ordinary "washing soda" of the household. The only disadvantages attendant on the use of this is that the negatives are stained much more than with the purer varieties, and also from the fact that, so it is said, the men engaged in the manufacture of it are paid by the amount of water they can make the salt crystallize with, without liquefying. It is carbonate of soda plus a variable amount of water, it cannot be relied upon for absolutely the same strength, when bought at different times. A purer variety, and one which I always use, is crystallised carbonate of soda, the Sodii carbonas P.B, which contains ten molecules of water, $Na_2CO_3,10H_2O$, and may be assumed to be a fairly constant quantity. The third variety of this salt is the anhydrous, which is the above-named salt partially or wholly deprived of its water of crystallisation by heat. But as the anhydrous carbonate of soda is very prone to absorb water and become carbonate of soda, Na_2CO_3, plus an indefinite quantity of water xH_2O, it is, I think, preferable to use the crystallised variety.

Before proceeding to consider the different fixed alkaline developers, it may not be out of place to consider what is the difference in practical results to be obtained by using ammonia or a fixed carbonate. The main difference, and one which will appeal most strongly to the beginner, is that with the fixed alkalis there is far less likelihood of chemical fog or fogging by development, and also, although I am not prepared to defend this second statement, except upon one particular ground, there is a possibility of, if not actually greater contrast when using the fixed alkalis, especially with soda, than when using ammonia. The extra freedom from fog is probably due to the fact that bromide of silver is not soluble in the fixed carbonates, whereas it is soluble in ammonia, and when using the latter the shadows are apt to be fogged. With the fixed alkalis there is certainly, in the hands of a beginner, more control over development.

The Potash Developer.—We are indebted for this developer to Dr. Stolze, and it is one which has found considerable favour. There is, perhaps, not much advantage in the use of potash over soda. With the former we can make more concentrated stock solutions and a somewhat quicker printing negative, which is an advantage sometimes. On the other hand, the developer itself turns brown quicker than the soda, which turns the characteristic yellow colour for which it is celebrated.

There are, of course, innumerable formulæ extant, but I shall merely content myself by giving two formulæ, both of which are well proved in practice:—

EDER'S FORMULA.

1.

Distilled water	100 parts.
Neutral sulphite of soda	25 „
Pure sulphuric acid	3 to 5 drops.
Pyrogallol	10 parts.

2.

Distilled water	200 parts.
Carbonate of potash	90 „
Neutral sulphite of soda	25 „

Dissolve in the above order. For use mix

Water	100 parts.
Pyro solution 1	3 „
Potash solution 2	3 „

I must say that I do not quite see the advantage of putting the sulphite of soda in the alkali; this is, however, probably done so that when mixed there shall be the proportion of five of sulphite to one of pyro.

Beach's Developer.—Although I call this the chemist's shop, on account of the curious mixture, it has done right good service in many hands.

1.

Hot distilled water	2 oz.
Sulphite of soda	2 „

When cool add:

Sulphurous acid	2 „
Pyrogallol	½ „

2.

Carbonate of potash	3 oz.
Sulphite of soda	2 „
Distilled water	7 „

Dissolve the salts separately and mix. For use mix:

Pyro solution	1 dram.
Potash	1 „
Water	1 oz.

The following remarks apply both to the potash and soda developers. Bromides act much more energetically with the fixed alkaline accelerators than with ammonia, and, in fact, where under-exposure is suspected it may be as well to leave it out altogether. It is advisable to use an alum bath after both soda and potash developers, if negatives without great contrasts are desired, as leaving the stain in the film increases the contrast.

Further considerations of modifications of the developer will be deferred till the conclusion of our notes on the fixed alkalis.

(*To be continued.*)

Tunbridge Wells Phot. Soc.—The ordinary meeting on the 3rd inst. Mr. E. R. Ashton in the chair. Mr. Gunner, of Tonbridge, was duly elected a member. The evening was devoted to examining and criticising the prints which had been sent in to the AMATEUR PHOTOGRAPHER Figure Study Competition, in which one of the Vice-Presidents, Mr. E. R. Ashton, was successful in gaining the second award (bronze medal); consequently there was more than ordinary interest attached to the prints, which were considered of a much higher average than some that had been seen before.

Edinburgh Phot. Soc.—The annual business meeting was held on the 4th, Professor Crum Brown in the chair After letters of regret had been read from Dr. Drinkwater and Professor Balfour at their being unable to attend, the Secretary and Treasurer submitted their annual reports, which were adopted. Some alterations to the rules were effected, and several new members were enrolled. The election of office-bearers for ensuing year was then proceeded with. The society now possesses a studio ready for use (we believe the only amateur club studio in Edinburgh), and an enlarging room nearly so. There was an exceeding good exhibition of work, over 150 pictures being sent in. Considering the small subscription, the society seems to be doing very well and worthy of support.

Catalogues.

"FALLOWFIELD'S PHOTOGRAPHIC REMEMBRANCER" FOR OCTOBER AND NOVEMBER.

THIS welcome little sheet is this issue devoted to winter requisites, and every novelty is included—all the latest things in the lantern and lantern requisites. Flash lamps and print and slide colouring materials are offered, and some rare bargains in job lots, which probably will soon be snapped up.

Review.

The Lantern-Slide Manual. By John A. Hodges. Published by Hazell, Watson, and Viney, Ld., 1, Creed Lane, E.C. Price 2s.

In this work the author has given us a complete guide to lantern-slide making. We have first "Slide-making by reduction," including "The apparatus," "Reducing by artificial light," "Cleaning and preparing the glass," "The negative." Section II. is devoted to the process of wet collodion and gelatino-bromide; Section III. to "Lantern-slides by contact printing," and working by artificial light, "The gelatino-chloride process." Section IV. treats of "Emulsion-making by the gelatine and collodion processes." "The albumen and carbon processes" next claim attention, and Section V., "The final treatment of the slide," shows how to tone and intensify, print-in clouds, mount, bind, and finish the slide.

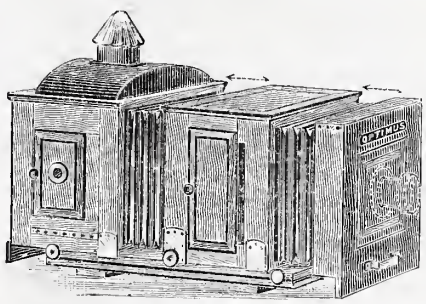
Mr. Hodges is well known for his slides, and so complete a work from him will be useful to tyro and expert.

Apparatus.

THE "OPTIMUS" ARTIFICIAL LIGHT ENLARGING APPARATUS.

Messrs. Perken, Son, and Rayment, of 99, Hatton Garden, have just introduced an improved form of enlarging and projection camera, available either for lime or lamp light.

As will be seen from the diagram, it has practically three parts—the lantern body, with bellows front, the central portion carrying the condenser, connected by bellows with the front carrying the objective. The condenser is inserted in the central chamber through the side door, and a very important gain is that, by the aid of special carrier frames, the condenser may be placed quite close to the light when using short-focus condensers, and also a 4 in. or 4½ in. diameter condenser may be used for projection in the same apparatus as a 12 in. or 16 in. diameter condenser is used for enlarging.



The back and front are both fitted with the patent "Optimus" rack and pinion, so that by merely pulling out the front by the brass handle seen in the diagram, the approximate distance between lens and negative, whilst the distance between light and condenser may be obtained in the same manner. Having thus obtained the approximate distances, the pinions may be, by a slight pull, placed in action with the racks, and fine focussing may be at once effected. Not only can the objective and light be thus moved, but the condenser also is moved to and fro by the central milled head.

The apparatus is strongly and substantially made, with either the necessary lime jet and fittings or the ordinary three or four-wick lamp. The objective is a portrait lens of the Petzval type, with large diameter back lens. This instrument will be of very great value to all those who wish to combine a lantern and enlarging apparatus, and it is one we can strongly recommend to photographic societies, as it can be used both for enlarging and projection.

BUTCHER AND SON'S LANTERN NOVELTIES.

W. Butcher and Son, photographic chemists of Blackheath, S.E., have placed two novelties on the market which are well



FIG. 1.



FIG 2.

worth attention. The combination cover glass and spot binder, shown in figs. 1 and 2, is a decidedly practical idea, and consists of a specially selected thin glass with a gummed binding strip attached, so that one has merely to wet the strip and place the slide in position and turn the binder down. The front of the binder is provided with a blank white space for title and two spots, thus saving the operator trouble.

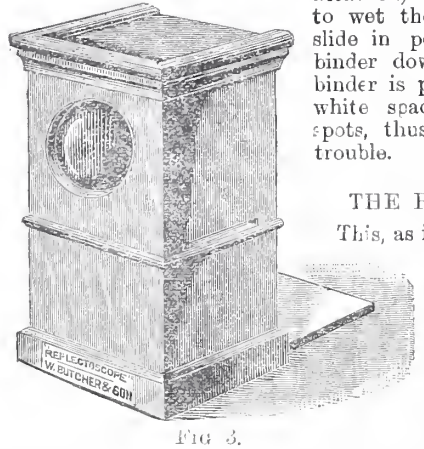


FIG 3.

THE REFLECTOSCOPE.

This, as its name implies, is an instrument for the table exhibition of lantern slides by day or artificial light. It is provided with a lens of 3¼ in. diameter, thus rendering the examination of slides very easy, and allowing the operator to judge of the tone and density of the slides without the bother of getting out the lantern. Both novelties strike us as extremely useful and well worth the attention of every lantern slide maker.

MEZZOTYPE PAPER.

With regard to our notice of this paper last week, the Carlotype Company call our attention to a slip. We say that they recommend a 1 : 5 fixing bath, but they do not do so, and say—"The fixing bath we use is 1 to 10, and we leave in this for fifteen minutes. We find that with this bath no appreciable reduction takes place, and the prints dry very brilliant and vigorous looking. Our paper of instructions does not give a fixing bath, and is not as complete as it might be, perhaps. But when we issued the paper we had supposed that most people using it would already have a knowledge of silver printing and the effects of fixing baths of different strengths. With a fixing bath of 1 to 5, the reduction of image is very rapid (unless toning is very thorough). A knowledge of this fact is extremely useful, as an over-printed specimen can be reduced by a prolonged fixing, but there is a danger that by this method the half-tones will be tinted with yellow unless there is a heavy deposit of gold." The error arose through a correction in ink on their bill of instructions.

BRUN'S GLOSSY TRANSPARENT COLOURS.

Messrs. Schwarz and Co., of Dashwood House, 9, New Broad Street, E.C., are placing upon the market the above.

The colours are concentrated and moist, and merely need diluting with water before laying on, without any previous preparation of the paper or slides. After colouring, prints may be burnished by the hot or cold process without in any way damaging the colours.

In conjunction with these colours a special competition is to be held by the *Practical Photographer* under the following conditions:—

1. £5 5s. and a handsome framed certificate of merit will be given for the best, and £1 1s. and a handsome framed certificate for the second best portrait coloured with Brun's colours. £2 2s. and a handsome framed certificate will be given for the best set of three lantern slides, coloured by the same means. Handsome framed certificates will be given to the competitors who run close to the winners.

2. Each competitor to send in one coloured mounted portrait, not



smaller than cabinet size, or three coloured lantern-slides, which will become the property of the editor of the *Practical Photographer*.

3. The competition will close on February 25th, 1893.

4. The judges will be three experts chosen by the editor of the *Practical Photographer*, and their decision will be final.

5. All prints in competition must be mounted on plain mounts, marked with a symbol or *nom de plume*, and must be accompanied by an envelope bearing the same distinguishing mark and containing the name and address of the competitor. Slides must also be marked with a symbol, and the name be sent in a separate envelope.

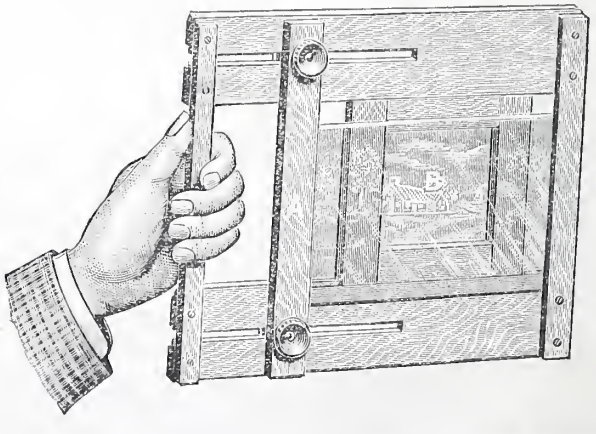
6. All work entered for the competition must be done with Brun's Glossy Transparent Colours, and must be accompanied by a printed form from the dealer from whom the colours were bought certifying the sale.

7. Any competitor may send in more than one coloured photograph, or may enter for both the print and the lantern-slide competition, but cannot take more than one prize.

8. The prizes will be in cash.

TYLAR'S "UNIVERSAL" LANTERN SLIDE PRINTING FRAME.

Mr. Tylar, of High Street, Aston, Birmingham, has introduced a new lantern-slide printing-frame, as shown in the accompanying figure. The negative is held in position by the clamping bar A, and can be moved either up or down over the plate-holder B, which is so adjusted as to slide from right to left up to the extreme edges of the negative used. The sensitive plate is



placed in at the back of the sliding holder B, in the same way as in an ordinary printing-frame. There is no chance of breaking the negative, as no springs press on it. The sensitive plate can be changed without interfering with the negative in any way. The price of the frame is 5s. 6d., and we can thoroughly recommend it to all lantern workers.

ILLUSTRATED SUPPLEMENT,

Monthly Competition, No. 41, "Inland Scenery, with and without Figures."

IT is with much pleasure that we have again to record a distinct advance in the quality of the work sent in to this competition. We have no hesitation in saying that many of the prints now placed in Class III. would in previous competitions have ranked in Class II., and some of the prints which, though placed in Class I., received no award, are superior to some which have in previous competitions taken the prizes.

The most noticeable features about the best prints are, first, the beautiful skies printed in; secondly, the rough matt-surface papers which lend themselves so readily to artistic effects; and thirdly, the superior style of the mounts. We trust this improvement will be continued in our succeeding competitions.

CLASS I.

1. BROOMHALL, P. B. (Twickenham). — "The Last Resting Place." Ross' Portable Symmetrical, *f*/22; 1 sec., August, diffused light, 4.30 p.m.; Fitch film; Mezzotype paper, extra rough. We have absolutely no fault to find with this picture, though personally we should have liked a sepia instead of the warm purple tone. It is one of the finest prints ever sent into our competitions.



No. 1.] "THE LAST RESTING PLACE." [*P. B. Broomhall.*

SILVER MEDAL.

2. KING, C. G. (London). — "Sunset after Storm." Single combination of 9 in. French R.R., *f*/22; 8 sec., March, dull and stormy, about 4.30 p.m.; Thomas' thickly-coated landscape; Ilford slow bromide rough-surfaced paper. "This is a combination print, the negative was taken and kept till suitable cloud negative could be obtained." Our block by no means does justice to this print, which is a very bold yet striking picture.

3. FULLJAMES, H. J. (Wimbledon).—"A Kentish Farmyard." Ross R.R., *f*/32; 2 sec., June, sun, 4 p.m.; Edwards's inst. Iso.; mezzotype; combined hypo, 1 oz., gold (15 gr. in 4 oz.) 12 drops, water 10 oz. "Fully exposed, in order to get detail in shadows, which, however, does not show on the rough paper." The suppression of the detail does certainly not detract from the very artistic result obtained.

4. MORISON, J., JUNR. (Glasgow).—"Loch Katrine and Ben Venue." Dallmeyer R.R., 12 by 10, *f*/32; about 2 sec., September, sunlight and shadow, 1 p.m.; Castle plate; sepia platinotype rough, no toning. A very fine print, which would have been improved by clouds.

5. PRESTON, G. (Cornwall).—"Sand and Water." Lancaster's half-plate Rectigraph, *f*/30; 1½ sec., August, diffused, 4 p.m.; Ilford ord.; Ilford P.O.P., squeegeed on to ground glass. A happy little bit of composition, though printed a little too deep.

6. GLASEBROOK, F.—"Devonshire Cottages." Sepia platinotype, Ross lens; taken about 4 p.m. in July, good light, exposure full, about 12 sec., stop *f*/32. Our block is the exact size of the print, which is a very delicate, soft little study.

HARVEY, C. J. (Kidderminster).—"Dying Leaves." Single lens, *f*/30; 3 p.m. "I took this subject in a very yellow light, thinking thereby to get the same result as if a yellow screen was used in white light." A pretty little quarter-plate, very simple yet pleasing, and although our competitor's knowledge on the subject of colour correctness is not very extensive, he has managed to turn out a good result. There is no advantage in using either a yellow screen or yellow light with an ordinary plate—rather the reverse.

VULLIAMY, E. P. (Glasbury). — "Maesclough Castle." Dallmeyer's Tele-photographic lens, No. 5 stop; 30 sec., August, sun and cloud, morning. This is the first example of work done by this lens sent in to our competitions, and it is very good, though rather spoilt by over-printing. The operator was half a mile from the castle.

MOSS, C. (London).—"Sunset." R.R., *f*/22; 5 sec., June, very dull light, 6.45 p.m. A half-plate platinotype cold-bath print of great excellence, but showing, so the judges thought, evidence of having been touched up.

MCCLEERY, J. (Belfast). — "In Early Spring." Single lens at *f*/20; 1 sec., June, diffused light, at noon. A half-plate matt chloride print; study of sheep, of great beauty, and highly commended.

BRADSHAW, T. C. (Ramsgate).—"On Loch Etive's Shore." R.R. *f*/16; 1 sec., sunshine. A matt chloride whole-plate print, which would be improved by a little less foreground.

D'AETH, C. C. H. (Wincanton).—"Salisbury Cathedral." Back combination of 7 in. R.R., *f*/32; 2 sec., May, good light, 4 p.m. A 10 by 8 platinotype print, excellent both artistically and technically, and highly commended.

GROOME, R. T. (London).—"The Path to Church." R.R., *f*/22; 2½ sec, September, dull light, 11 a.m. A little quarter-plate chloride print, much admired by the judges, who suggested a rough printing-out paper.

HOLT, H. (Liverpool).—"Rydal Water." R.R., *f*/32; 8 sec., April, very dull light, 3 p.m. "Taken in most wretched weather, between heavy snow showers; clouds in original negative. Dull cloud, just what I wanted to get the effect." A 7⅛ by 5½ matt chloride of great delicacy and softness, and very highly commended.

BULMER, P. (Durham).—"Derwentwater and Skiddaw." R.R., *f*/64; 4 sec., May, good light, 3 p.m. "A long bit cut from a whole-plate, and very effective, the distant mountains being exceptionally good.

HIRST, E. (Cleckheaton).—"Solitude.' Single lens, *f*/20; 1 sec,

August; good diffused light at 4 p.m. "The negative was taken on a half-plate, and portions of it masked out." The actual print measures about 2½ by 5½, and had a little more been included of the trees on the left-hand side, a better picture would have resulted.

BERRY, A. R. (Brockley).—"Porchester Castle." R.R., *f*/32; 2 sec., February, sunlight, 11 a.m. Rough-surface silver paper. Too warm in tone, and sky far too deeply printed.

CLASS II.

BAILLIE, W. W. (Oundle).—"Frost and Fog." R.R., *f*/22; 2 sec., on dull, foggy day, at 11 a.m. in December. A very fine frost study, which would look far better on a matt-surface paper.

BATTY, A. C. (Liverpool).—"Eventide." 8 by 5 Beck R.R., *f*/16; 1-10th sec., 4.30 p.m., August, mean; Marion ordinary, pyro ammonia, cold bath platinotype. Far too black and white. An exquisite sky, but the foreground is too black, and the light on water too white to be true.

SNOWBALL, G. L. (Newcastle-on-Tyne).—"The Old Smithy, Kilnockie." F.L.R. lens, *f*/32; 2 sec., August, good light, 12.45 a.m.; Castle; Ilford P.O.P., combined toning and fixing. Highly commended by the judges, showing very careful and excellent work.

SANDERSON, F. H. (Cambridge).—"On the Cam." French R.R., *f*/16; 1-10th sec., soft sunshine, 12.30; Ilford slow; Solio paper. This could easily have been improved by raising the camera front, and cutting off some of the unnecessary foreground, and taking in the tops of trees.

ROBERTS, DOWEN (London).—"Walberswick, Suffolk." Swift's rapid Paragon, *f*/16; 1/3 sec., August, bright light, diffused, noon. Fry's K.S.; cold-bath platinotype. "Cloud obscured the sun at the moment of exposure." Nearly an inch less foreground, and clouds would have improved this vastly.

SEVERS, JOSEPH (Kendal).—"Coniston Valley from Lake Bank." Beck's R.R., *f*/32; 1 sec., August, sunshine, 4 p.m.; Marion's ordinary; Ilford P.O.P. The surface of the lake was ruffled by a strong breeze, which, however, did not at the moment disturb the foliage in the foreground. A pretty little quarter-plate study, which is printed just a trifle too deep.

POTTS, W. E. (Manchester).—"View in Miller's Dale, Derbyshire." Wray's single lens, 12 in. focus, *f*/45; 15 sec., August, sun, 4 p.m.; Ilford rapid; platinotype. Although the branches and leaves in the foreground are far too black and heavy, they throw up the distance very well.

MAXWELL, J. PRESTON (London).—"Auld Brig o' Isla, Keith, N.B." R.R. lens, half-plate, by Morley and Cooper, *f*/16; 12 sec., August, dull light, leaden sky, slightly raining, 3 p.m.; half-plate, Ilford rapid; Ilford P.O.P., gelatino-chloride. "Taken rather in a hurry, between two heavy showers of rain, from under trees." The print is flat and poor. We would suggest a rough-surface paper for this.

NEWLAND, A. (Burmah).—"Troops Encamped on the Chin Frontier." A clever bit of work, and a really artistic view.

MCCLINTOCK, R. L. (Woolwich).—"An Old Mill." Lancaster's Silver Ring rectigraph, *f*/22; 1 sec., June, diffused light, about 4 p.m.; Ilford ordinary; platinotype, cold. "The light was failing rapidly, but was pretty fair, although the day was cloudy." The right-hand side is a little too black and heavy, but it makes an effective print.

LONGMORE, H. A. (Sydenham).—"In Hermitage Woods." R.R., *f*/22; 12 sec., July, dull light, 3 p.m.; Ilford ordinary; platinotype (new cold-bath). "Having focussed and being ready to expose, I had a wait of twenty minutes before I could do so, owing to a troublesome wind which rustled the leaves about; a lull coming I seized the opportunity." A very good print, but we should have liked to have seen the foreground sharper and the distance less so.

LINGING, H. F. (Newcastle-on-Tyne).—"Flint Mill, Blaydon-on-Tyne." Optimus, *f*/22; 4 sec., September, bright light, 2.30 afternoon; Castle; Solio paper. Far too heavily printed and thus spoilt.

JONES, W. LLOYD (Cheshire).—"Rigg Mill, near Whitby," Dallmeyer R.R.; time exposure, August, diffused light, about 1 p.m. Paget xxx; P.O.P. Print over-printed, flat, and heavy.

BOOTH, JAMES A. (Reading).—"Clifton Bridge." Half-plate rectilinear, *f*/22; 20 sec., September, dull, misty distance, about 5.30 p.m.; Thomas T.C.L. A very effective study, which would lend itself well to artistic results on rough or matt paper.

COULTHURST, S. L. (Manchester).—"An Irish Lane." Wray's 5½ in., R.R., *f*/11; slow shutter, July, soft and clear, about 11 a.m.; Castle, developed pyro-ammonia; P.O.P. A capital little quarter-plate shot, very soft and delicate.

BROOK, T. MORLEY (Manchester).—"Rigg Mill." Wray's single, *f*/22; 10 sec., August, dull light, raining heavily, 3.15 p.m.; Ilford special rapid; Blanchard's platinum. A little less foreground and more sky would have improved this.

BROWN, A. (Waterloo).—"Stepping Stones, Raby Mere." Eureka R.R., *f*/22; 2 sec., April, sun shining, 1 p.m.; Ilford ordinary, half-plate; P.O.P. A good picture simply spoilt by over-printing.

SPIERS, W. R. (Haltwhistle).—"The Morning Boat." Optimus Euryscope, *f*/32; 1 sec., August, 6.30 a.m., dull light, misty. Edwards' Isochromatic instant. A very good result has been obtained, considering the early hour. The distance is very good.

TODD, R. (Heaton).—"Waiting to be Shorn." French R.R., *f*/11; half sec., June, sun behind cloud; Ilford White Label; P.O.P. A very soft delicate print, but just wanting in brilliancy.

WEBLING, A. H. (Brighton).—"Returning from Work." December, 4 p.m.; Ilford; Taylor R.R., *f*/22; 3 sec.; Soltype. A very good print, commended by the judges, but the figure a little too central.

WOODS, V. S. (Chelsea).—"Glen Artle." R.R., *f*/40; 3 sec., August, bright sun, 5 p.m. Thomas's Iso.; mezzotype. Printed too deep, and wants clouds; could be made a picture though.



No. 2.] "SUNSET AFTER STORM." [*C. G. King.*

BRONZE MEDAL.

CLASS III.

Adams, A. J. Ambleside
Aldridge, C., Dr. Plympton
Allen, J. E. Sheffield
Allen, T. ... Barrow-in-Furness
Anderson, E. Newcastle-on-Tyne
Archer, C. F. ... Clapham
Arrow, G. London, W.
Ashburn, W. D. ... Bromsgrove
Banks, J. F. ... Norwich
Baxter, G. H. ... Jersey
Barnard, M. E. W. Brighton
Barnard, V. M. W. Brighton
Benton, W. C. ... Bolton
Blackhurst, J. W.... Lincoln
Bleach, F. London, W.
Bright, S. C. ... Genoa
Brodie, G. ... Aberdeen
Burder, W. C. Loughborough
Champness, A. J. ... London, S.E.
Chattaway, E. ... Warwick
Cheesman, W. N. ... Selby
Clegg, J. Rochdale
Clemence, H. London, W.
Coates, J. Dunmurry
Cooper, A. B. ... Hulme
Copeman, R. W. ... Henstridge
Craik, W. Forfar
Crew, F. A. London, N.W.
Dart, W. B. ... Torrington
De Capell, Brooke C., Kettering
De Leghe, G. ... Mortlake
Dennison, W. ... Kendal
Dicker, S. London, N.
Douglas, S. E. ... Perth
Dyson, H. G. ... Sale
Ede, F. W.... ... London, N.
Edwards, J. ... Hereford
Evers, C. J. E., Dr. Faversham
Farmer, E. ... London, N.E.
Fawsett, E. E. ... Louth
Fielding, F. ... Blackburn
Fojwill, A. ... Portsmouth
Forman, E. H. ... Louth
Geddis, A. M. ... Kingstown
Gilbert, T. London, S.E.
Glazebrook, T. Ashtn.-undr.-Lyne
Glover, W. J. ... Warwick
Gray, J. Glasgow
Greenall, C. E. ... Kendal
Hale, E. P.... ... Rock Ferry
Hallett, C. F. H. ... London, W.
Harding, G. ... Stourbridge
Harrop, J. A. ... Birmingham
Harvey, A. H. ... London, E.
Heath, F. P. ... Kendal

Hepworth, H. ... Manchester
Hirst, W. York
Holden, J. Manchester
Hurman, E. ...New Swindon
Inglebywood, L. ... Botherby
Irvine, C. A. Harrow-on-the Hill
Jackson, W. ... Preston
Kauffmann, J. ... Zürich
Kieffer, W. E. ... Sunderland
Kingsford, R. L. ... Exmouth
Kitchen, A. ... Rutland
Laidler, T. S. Fellington-on-Tyne
Le Marchant, H. ... Woking
Lord, G. Salford
Lunn, J. T... ... Bolton
McCutchan, W. A. M. Stoke-under-Ham
Macgregor, A. M.... Huddersfield
MacMillan, M. Port Bannatyne
Marsden, A. ... Dewsbury
Marshall, G. H. F.... Bath
Marsland, Miss, Ashton-on Lyne
Mason, M.... ... Hadleigh
Meynell, H. ... Cheadle
Micbie, R. H. ... Hamilton
Moat, W. Guide Bridge
Morgan, H. G., Rev. Bromyard
Morison, W. Glasgow
Moseley, E. H. London, E.C.
Mudd, T.... Hartlepool
Nettleship, T. W. Bawtry
Nicol, E. ... Perth
Norris, W. Manchester
Pasco, G. S. London, N.E.
Paterson, A. G. Barnsley
Patterson, T. Preston
Pattison, J. Darlington
Payne, A. H. Brockley
Pearce, R. J. Durham
Petty, D. ...London, N.
Phœnix, H. Sheffield
Pritchard, F. P. London, W.
Rambant, W. T. R. Dundrum
Richardson, J. T. Nottingham
Roberts, C. A. Liverpool
Roscow, J. S. Bolton
Salter, T. T. London, W.
Savage, G. A. Folkestone
Shaw, F. W. Manchester
Shaw, R. Coniston Lake
Sikes, F. H. Chester
Silver, A., sen. Wlvhmptn
Simpson, J. Dublin
Spalding, F. W. Norwich
Tapp, M. E. ...London, S.W.
Taylor, W. ... London, W.
Teversham, R. ...London, N.W.
Thirkettle, W. L. ... London, N.
Timmins, C. A. ... Runcorn
Tims, J. Ewell
Tucker, G. D. ... Bristol
Wakeman, Newporth, Bewdley
Walkerden... ... Minehead
Waller, R., Col. Bourton-on-Water
Walley, W. H. ... Burslem
Walmsley, T. W. ... Dulwich
Wesencraft, H. H. Tynemouth
Westhead, W. R.... Hindley
White, C. L'Abri Territet
Whyman, W. ...W. Smethwick
Wight, J. ... Wolverhampton
Willinson, W. F., Rev. Cavan
Willman, E. ... Rochdale
Witt, M. C. ...Auchnasheen

CLASS IV.

Adlard, C. W. ... Lincoln
Anderson, W. S. ... Edinburgh
Andrade, E. ... London, N.
Angear, W. E. ... Yelverton
Atherton, J. ... Fulwood
Ball, F. R. London, S.W.
Barber, R. ... London, N.E.
Binks, W. Harrow
Bolland, E.... ... Manchester
Bolton, C. P. ... Waterford
Boyer, J. F.... Woodford Wells
Boyes, W. H. ... Southport
Brown, E. C. ... Aberdeen
Butcher, F. E. ... Blackheath
Butler, J. F. ... Ealing
Cain, J. J. Millom
Christie, T.... ... Manchester
Clark, J. W. Croydon
Coler, W. K. ... Shere
Cook, J. C. ... Beverley
Crawshaw, A. ... Dewsbury
Cutler, F. W. O. ... Oaken
Dixon, E. Ealing
Dunean, A. H. ... Glasgow
Dunne Trim
Eales, A. F. ... Enfield
Field, A. M. C. ... Cambridge
Foy, H. F. ...London, S.W.
Gape, C., Rev. ... Scole
Gauntlett, E: ... London, S.E.
Gethen, C. ... Hereford
Gibbons, F. C. ... Manchester
Gibbons, S. ... London, S.E.
Gittins, C. E. ... Oxford
Grant, F. W. ... London, S.E.
Guerin, F. L. ... Rathmines
Hannant, H. ...London, S.W.
Harvey, A. H. ... London, E.
Haywood, W. W. ... Liverpool
Henderson, J. H. ... Edinburgh
Henny, J. P. ... London, S.E.
Holt, W., junr. ... Manchester
Ingham, W. ... Rochdale
Jenkin, G. W. ... Croydon
Jones, H. P. ... Horncastle
Jones, W. T. ... Birmingham
Joscelyne, F. H. ... London, W.
Kendal, E. M. ... Cheadle
Ketton, F. ... Fulwood
Lambe, D. W. ... Edinburgh
Lawlers, R. E. S. ... London, E.C.
Light, R., Capt. . . Torquay
Liversedge, L. ... Liverpool
Livesey, W. F. ... Penwortham
Lunham, A. B. ... Ealing
Lyle, C. London, N.W.
Lyon, E. J. ... Wimbledon
Macintosh, J. ... Preston
Mackenzie, J. G. S. Edinburgh
Mackenzie, R. W. J. Dover
Mead, C. W. ... London, N.
Minglard, W. V. ... London, N.
Misselbrook, T. V. W. Gosport
Myers, U. C. ... Newbury
Niblett, J. Ledbury
Nicholls, A. C. ... Cheltenham
Nugent, J.... ... Dalkey
Orr, F. H. Kingstown
Payne, W. Leicester
Pickard, F. V. ... Manchester
Powling, T. ... Glasgow
Prann, R. H. ...London, N.W.
Price, H. G. ...London, S.W.
Pyne, F. J. M. ...Southampton
Rand, C. T. ... Portsmouth
Reeves, A. London, S.E.
Rhodes, J. H. ... Kendal
Richard, F. B. ... London, S.E.
Ridpath, K... ... Beckenham
Robertson, J. ... Glasgow
Robinson, E. T. ... Harrogate
Robinson, J. ... Darlington
Roche, A. Cork
Rowe, F. W. ... Gt. Marlow
Rydings, W. ... Manchester
Slater, J. Y. ... Wakefield
Smith, S. Faversham
Storey, R. G. London, N.W.
Stubbs, J. B. ... Manchester
Tapson, E. J. ... London, S.E.
Thomson, T. B. ... Edinburgh
Usher, G. T. London, N.W.
Vaughan, G. A. London, N.W.
Waters, G. Ealing
Waters, W.... ... Ealing
Wheatley, R. A. ... Oxford
Whitewell, G. T. ... Kendal
Wilkinson, A. ... Liverpool
Wilson, H. W. V. New Brighton
Wood, E. Blackley

The following prints were disqualified as being figure studies rather than landscapes with figures. If the competitors desire it, we will retain for the next figure study competition:—

"Waiting for the Old Man" Mrs. M. Pollard
"Expecting Friends" A. Silver, jun.
"In the Arab Town, Algiers" T. A. S. Scott
"Haymakers Gossiping" T. Leach
"Nibbling" W. Thomas
"The Mill House" Stanley Brook
"Front Door, High School, Sunderland" P. S. Foster
"Moorland, with Group of Sportsmen" Miss M. Hill
"Recreation" W. Adams
"Chacun pour lui-même." No entry form

The following prints were received without entry form, and were placed in Class III.:—

"Champery, a Swiss Village."
"A Rustic Home."



No. 3.] "A KENTISH FARMYARD." *[H. J. Fulljames.*
CERTIFICATE.

The Object of Photography.*

By CATHERINE WEED BARNES.

HAVING been asked to open the discussion to-night, the above subject has been selected as being important, and as permitting considerable difference of opinion. Let me indicate at once the broad, liberal lines on which it seems to me the discussion should be pursued. As long as human beings are not created free and equal, although a certain well-known document says so, they will differ materially in their objects and their pursuit of them. Especially is this true of mental processes, among which, I claim, photography holds no mean place. The object which each worker has in view may, and often does, differ widely from that which he should pursue in order to obtain the greatest possible benefit, and in thus striking the keynote of my paper I hope to point out in some degree the ideal all camerists should keep in sight. We all know the great moral axiom that we best help ourselves by helping others; indeed, it cannot be otherwise, and this help can be given in many ways, only seen by those whose minds are trained to receptivity of all progressive movements. The human mind is an organ, a function, an intangible, incomprehensible force—what you will; but it is great or small, not only according to the impulse behind it, but the use we

* Read at the Photographic Club.

make of it. We may look at photography through a narrow or wide-angle lens, through the telescope or ordinary view; there is plenty of choice, all depends on the will of the individual worker. Those who are able to learn by everything teachable in the realms of mind and matter will find that in photography these two forces join hands with greater or less energy according to the object of each worker. Those will gain the most whose ideal is the highest, and, as in union there is strength, so photographic workers accomplish most when organised into societies, provided the standard is held high over men's heads and never lowered from fear of criticism, for any purely personal or selfish motive. What if any individual worker should come more prominently than another into the brilliant electric light of public opinion or approbation. Is that a reason for discouragement or lowering one's own flag? Rather should it be an impetus forward on the principle of the fairy in one of Jean Ingelow's stories. "Don't you know," she said, "that in Fairyland what you can do you may do?" The trouble is we carry on the fight somewhat on the free-lance principle, and "each one for himself" does not advance the general standard of progress. If individual preference be on the high plane of real altruism, well and good; but, usually, the ordinary human being is more exercised in raising his own special average than the general one of humanity.

Let us consider then what photography can do to elevate this general average. If nothing, it is worthless, but it can do much and it is worthy of thoughtful consideration.



No. 4.] "LOCH KATRINE AND BEN VENUE." *[J. Morison, jun.*

The adage that "beauty is its own excuse for being" does not entirely cover photography. The latter adds to the cultivation of the beautiful, that of the useful. Thousands of feet below the earth's surface, as regards land and sea, has the keen eye of the lens revealed to us once hidden mysteries, and beyond the systems of worlds heretofore unknown has it opened limitless possibilities. What other art or science can claim so much? In the astronomical equipment of Harvard University, near Boston, is being set up the largest photographic lens ever made, to be electrically controlled in correspondence to the motion of the earth. The lens has a 24 in. aperture, and will be used on a 14 by 17 plate. The time is fast approaching when photography will be utilised in all the countless ramifications of human knowledge, and there is no use in artists or scientists denying what will soon be an undeniable fact. Even on the lowest plane of merely personal help to each individual worker, photography is a pursuit embodying in itself broad scope for cultivating the powers of the keenest brain. Much more is this increased when we take into consideration our fellow-workers. Every thought which finds effect in word or act is a stone dropped into the stream of human life whose widening circles touch and influence countless others.

Speaking of the individual worker, what is and what should be his object in this work? We know they are not always the same thing. He begins, we will say, because it is suggested to him as an amusement, and many never get any further. They can be left out of the question; but to those who once begin to make a study of the work and find it broaden into one field after another, filling one's utmost limit of mental effort, the interest grows more absorbing as they realise that, however great may be their progress, they will never know all there is to be known. The object which at first is pleasure only in the sense of recreation, becomes then something far nobler as a powerful factor in training, what we speak of so often, and comprehend so incompletely, the human intellect.

If we accept the object of photography as being a mental education, how can it best benefit us? In every study those gain most who come equipped for work by natural or acquired gifts. Perhaps no one faculty in photography is more quickly called into exercise, or more rapidly improves, than that of observation. As this grows keener, the eyes stimulate the brain to act, and in landscape work alone, a fuller, richer appreciation is daily given us of the world of nature. The shortest journey shows us what we might otherwise pass by unheeding, and extended travel sends us home benefited by a wealth of experiences which many of our fellow-travellers lose. We do not need to go on land and sea for such; often near our own doors we learn to see a constantly varying panorama of change. I do not believe that in any more efficient way can we be helped than by aiding this very faculty of observation, especially in the young, when it can be made a fixed habit.

Passing from the world of nature to that of man, we find, although we are usually gifted with the same physical organs and general appearance, that such are capable of infinite variety when looked at from different standpoints. In portraiture the object should be to truthfully and kindly represent the sitter's best aspect. We have in this to struggle against preconceived prejudices, as people always think they know for themselves what the old woman called her "congregation side," and it is well occasionally to see ourselves with others' eyes. Once in a portrait gallery I heard a lady say, looking at her proof, "I don't like it at all, but it looks just like me." Another time, the photographer said to me, "There's Mr. A. has been here four times this week to sit, and yet is not satisfied." Do we all know our best side? Every portrait photographer who properly knows his business understands that the first grand requisite of success is to make the sitter feel at ease under far different circumstances from his usual ones. It would be well if this was more carefully considered and made a more striking feature in our studios, but it draws heavily on one's nerve force, and necessitates more of a strain than most operators are willing to endure, unless really in love with their work, which the majority are not. I have had occasion to see a good deal of the inside of a professional studio, and a day's observation of the different sitters gives an entertaining study of human nature. I have often thought it would pay to have a regular adviser or art director in the studio to advise sitters, men and women, for one is no wiser than the other, what to wear and how to wear it to obtain an effective picture. If the operator attempts this, he too often meets a sharp rebuff. The amateur, if he be willing to use time and patience, has often a great advantage over the professional in respect to this question of being at ease, as his work is done usually amid familiar surroundings. I undertook once to photograph an old artist friend, who would not assume any but the stiffest possible pose of the shoulders, until I placed a palette and brushes in his hand, when his whole attitude became at once perfectly easy, because natural. Figure studies, to one who has a taste for them, are the most fascinating and, at the same time, most trying and difficult branch of photography. There is always something to learn in it, and its difficulty is, to me, its greatest charm. What is easy presents no attractions.

Every worker is more or less influenced by others, therefore he best utilises his own efforts, and in his turn exerts influence, by joining, as before suggested, a photographic society. The ideal one has yet to be invented or evolved, as the tribes of men increase in not merely technical knowledge, but common sense. As at present constituted, they form, in the main, excellent schools as regards practice for those workers already somewhat proficient, but should do more for the beginner than is the case. As managed here and in America, they vary greatly, and each might gain by adopting some of the others' methods. I differ from my compatriot, Dr. Mitchell, in his advocacy of the club system, believing in the work as a mental education, not as a mental recreation. One point generally lost sight of in such organizations, as soon as they become pros-

perous, is the great law of majorities—the greatest good of the greatest number. Few human beings are capable of self-abnegation under such circumstances, and when they are, it is often to meet criticism, if not opposition, on the part of those less disinterested than themselves. The true worker should, however, like the Alpine climber on the glacier, be so busy in cutting steps for his feet, that he cannot watch the progress of others, but must attend to his own. When comparative success is gained, then comes the danger common to success, believing the summit has been reached, than which there is no more fatal delusion. It is possible, in tracing out the various by-patbs of photography, to make the pursuit in large measure a liberal education, and the widest culture can be used advantageously. I believe in a sound technical training in optics, chemistry, and mechanics, and elementary, if no more, art training, and a wide reading of the best general literature. Here is where so many photographers—more professionals, perhaps, than amateurs—fail to realise the importance of cultivated intelligence in what claims, and rightly so, to be ranked among the fine arts. One should also make a point of keeping in touch with all that is being said and done through the various photographic journals in different countries, not work on blindly in one's own little special pathway.

If the object of photography is to educate, that means liberalise, and for this a thousand ways are open through literature, science, and art. Decrying tbe increase of illustrations by photography as injuring wood-engraving, for instance, is like the rebellion of hand-work as against machinery. The world does move if people will act as did some Indians once on the American prairies who attempted to stop a train by holding a long leather lariat across the track. The Indians suffered, not the train. Photography is a most important adjunct in nearly all mental studies, and will become more so as its facilities for work increase. Let each one, therefore, follow out his or her own salvation, grateful for criticism or praise, whichever best aids in keeping higb the standard already indicated. Lenses, cameras, instruments of all kinds are only means to an end, discussions upon them and upon methods of work are only valuable as tbey conduce to the further elevation of photography itself.

I feel strongly on this subject, believing firmly that photography can be of incalculable benefit to all who pursue it with singleness of purpose, or with a desire to help others. In this connection let me heartily endorse and offer hearty co-operation to the affiliation scheme recently proposed by the Cheltenham Society. It is a move in the right direction, and deserves the endorsement of similar organizations, wherever located. While not criticising those who look at the object of photography from a different standpoint than my own, I merely place myself on record as regarding pbotography in the light of a vital, educational force; a responsibility, and not a plaything; a power which can be used in so many ways when seriously considered that I cannot but feel it a privilege to be numbered among its adherents. Time and conscience prevent my wearying you with a longer paper, and yet I feel tbe subject has been very inadequately treated, my only consolation being that, in presenting it to you, I am enabled to emphasise my strong interest in the work to which my time and energies are devoted.



No. 5.] "SAND AND WATER." [*Geo. Preston.*

The Reflection of Light.

In tbe current number of the "Philosophical Magazine," Lord Rayleigh communicates the results of his researches on the reflection of light, which cannot but be of interest to all photographers. The object of the research was the photometric comparison of the direct and reflected rays from a glow lamp. Photograpby was used, and the integration of the effect during an exposure of several minutes allowed the adjustments to be made with greater facility. Owing to striæ in the glass bulb it was necessary to cover it with tissue paper, and as the rays proceeding from tbe lamp in opposite directions were used, it was rotated slowly during the whole time of exposure. At first ordinary plates were used, but as these plates are scarcely sensitive to yellow and green light, the effective light was liable to considerable variation with the current used to light the lamp.

Isochromatic plates were then employed, and a yellow glass was used. The spectrum was photographed and was well defined, lying with almost perfect symmetry between the sodium and thallium lines. The effective wave length was therefore about 5,620. Under favourable circumstances it was possible to deduct the difference of $3\frac{1}{2}$ per cent. in the photographic records.

A few experiments could therefore be expected to give the required result within one per cent. Lord Rayleigh's photographic method of photometry, the value of which depends on the observance of these simple but important conditions, may be expected to be of considerable value in ordinary photometric work.

With the reflective power of water, viz., 0·02076 to 0·022, as measured by Lord Rayleigh, we are not much concerned, but the efficiency of mercury, 0·753, is of considerable importance in connection with the use of reflectors for electric light. It is not probable that reflectors coated with metallic silver are materially better than the best mirrors with mercury amalgam, and allowing for the glass and for tarnish, it must not be expected that more than 70 per cent. of the light falling on such reflectors could be returned. Accurate determinations of the reflective power, according to Lord Rayleigh's method, would be vitiated by however small departure from strictly plane reflectors; but a very small surface would suffice.

The efficiency of metal reflectors is not so important for practical purposes as that of silvered glass, because of their liability to tarnish. The following figures may, however, be of interest:—

Zollner gives the reflecting power of mercury at 0·648; speculum metal, 0·535; glass, 0·040; water, 0·021. The last of these agrees well with Lord Rayleigh's determination, but there is a considerable divergence in the first. Sir J. Conroy found silver to be 0·70; speculum metal, 0·66; steel, 0·54; and tin, 0·4; but from the account of his experiments in "Proc. Roy. Soc.," xxxv. and xxxvi., he does not appear to have made his observations immediately after polishing the mirrors.

Herschel gives 0·6 as the reflective power of mercury, and puts silver as high as 0·9.

Bath Phot. Soc—The first indoor meeting of the winter session was held on the 26th ult., Mr. Austin J. King, President, in the chair; a paper was read by Mr. George Norman, entitled "The Camera as an Aid to Archæology." The lecturer said his special object that evening was to show tbe use of the camera in making permanent records of the forms of ancient buildings, many of which were fast disappearing from the land. For this purpose there were exhibited upon the screen pictures of Irish architecture from the earliest to mediæval times, mostly from the lecturer's own photographs taken at meetings of the Royal Society of Antiquaries of Ireland, commencing with the primitive lake dwellings and underground caves, and passing on to the beehive cells and oratories. He then described the various forms of the early Christian churches, which reached their highest development in Cormac's Chapel at Cashel, with its barrel vault and high-pitched roof of stone, and concluded with a series of illustrations of mediæval abbeys and cathedrals.

Out-door Winter Photography.

WHILST at the present season of the year a large number of our readers turn their attention to the fascinating pursuit which the making and showing of lantern slides offers, yet to a good many it is a time when the camera is practically shelved for three months at least, under the impression that photography, especially landscape photography, is an occupation of summer time only.

As, however, attention has of late been increasingly directed to picture making in its higher sense, and an artistic perception of things more and more generally cultivated, so some have sought the picturesque, not only in out of the way places, but also at unlikely times and seasons, and have found nature beautiful when previously they had imagined her void of attractions or without interest. Still, we believe too many are content to let the winter, and with it the months of late autumn and early spring, slip by without ever venturing out into the fields and countryside, or, at least, without ever attempting to discover whether at the less inviting periods of the year the spots which gave such delight when the sunshine was warm, and flowers and green foliage made so bright a summer picture, may not in the barrenness of winter present to the artist or photographer something worthy of study; and hence, perhaps, a few suggestions at the present moment, as we cross the threshold of November, dreariest month of all the year, may not be without some practical good.



No. 6.] DEVONSHIRE COTTAGES. *[F. Glasebrook.*

To commence with, what may be called the mechanical difficulties can hardly be brought forward as a reason for not practising photography during winter. The increased facilities which science has placed in the artist's hands, such as plates of greater rapidity, lenses of large aperture, and so forth, leave him in a position of which photographers of but a few years ago never dreamed, and make him practically independent of the weather.

That an excursion across marshy lands in November, or a tramp across the bleak moorland on an average December day is as *enjoyable*, from an ordinary standpoint, as the same ramblings would be when the soft and genial air of summer carries with it the memory of newly-mown hay over which it lately passed, and very gently stirs the rich foliage of the trees, musical with bird voices and grateful environment of cool shade, yet we do not hesitate to say that a picture at the present season is often possible, and even very desirable, when, except as a pleasant spot to visit or a quiet place wherein to rest awhile in leafy June or sultry August, it would have been without attraction for the serious artist. To face a cold, damp wind, and encounter pools of water, tracts of soft mud, beds of wet decaying leaves, and such things as must be anticipated on a country walk when for weeks the sun has not had sufficient power to evaporate the excessive rainfall, may not be either enjoyable or pleasant, and yet there are thousands who think such matters quite inconsiderable as compared with the passing and, contrasted with our more serious pursuit, we may say trivial pleasures of shooting, golfing, or hunting, so that if we are in real earnest in our photographic work the mere inclemency of the season and personal inconvenience will be insufficient reason for keeping the camera within its case and ourselves in the easy-chair.

Probably the real reason with many is not so much a reluctance to turning out of doors and donning overcoat and shooting-boots as the fact that the idea of seeking for the picturesque in the flowerless and forsaken fields, or where the trees, leafless and barren, stand black and gaunt against the dull sky, has never occurred to them; and then again, just as everyone of us accustomed for years to travel by the same road, may be hardly conscious of the existence of many a notable place scarcely removed from the well-known path, so there are some whose observations have always as it were travelled by the high road of general and conventional taste, and who never thought to diverge a little from the beaten track and see what beauty may lie hidden where circumstances have not led us before, and where custom prevents the ordinary man. For such there is, indeed, a store awaiting. We are not of course, addressing ourselves to the knowing ones our more advanced readers, to whom the mysteries of a winter landscape are already known, but to those whose only idea of a winter picture is the representation of the phenemenal whiteness of a snow scene or the fantastic, and withal beautiful, coverings of hoar-frost; and to such, if a hint of ours can only prove an incentive to study the picture possibilities of landscape in winter, we shall have opened up a field perhaps more boundless in opportunities than when the land is warmed by summer sunshire, and made radiant with the long daylight hours.

The natural disposition of photographic methods to exaggerate the shadows of the scene, and to lower the general tone of the picture, and also the tendency of nearly all photographers to "over-print," and so to carry the error still further, may to some extent account for the great number of sunset, twilight, and similar low-light effects being present at all photographic exhibitions and displays. The inseparable characteristics of photographs will often make them appear very true to the early morning or late evening effects, when, as a matter of fact, the negative was exposed at quite a different time of day, and the altitude of the sun, and the consequent position of the source of light in the picture, is the only thing which betrays the truth. Hence, the darkness of photography should, and, as we think, does lend itself peculiarly to the truthful rendering

of winter subjects. Moreover, who that has watched nature with a sympathetic eye has not noted the beauty of the landscape when the sun climbs down the heavens towards the horizon? And so in the winter, when the sun never approaches anywhere near to the zenith, we have constantly the broadening result of a low source of light.

And then as to what subjects are most likely to prove satisfactory in winter, is a more difficult and extensive question to deal with, and we can hardly do more than suggest some of the things which are likely to prove satisfactory as pictures.

There is an immense field for work in woodland scenery, a locality hardly possible for camera work when the trees were clothed with summer foliage, and little light could penetrate into the deep umbrage. Moreover, the foliage does not often render pleasantly by photography, and the eye seems to require relief and variety; so now that the branches are becoming leafless, and the fascinating forms of branches and tall stems are revealed, is the time to attempt the forest glade and woodland path.

Anon in a forest, clearing an open space, where trees have been felled—or, perhaps, have never grown—the ground is covered with undergrowth of bramble furze and bracken, patches of brown grass and heather intervene, and, perhaps, some dark pools of stagnant weedy water, with tufts of round-stemmed rushes and plantain. For variety we may find little protruding knolls of bare soil, red earth or yellow gravel. In such a spot the trees are often smaller, slighter in growth, or torn and twisted by wind and storm. The grey-white stem of the silver birch is here a conspicuous feature, forming nice contrast with the dark background of the adjacent forest, and, oh! the glory of the touches of brown and amber where the withering leaves still cling to blackened branches. Is there not a picture here with the trees not so near and tall as to shut out all the sky, but just enough of soft cloud effect above, and just sufficient light amongst the dark forest trees to prevent their coming out on our print a black and heavy mass. The carpeting of bracken fern in all the beauty of summer greenness is not so satisfactory to the picture-maker, as, now seared and broken, they form strong patches of bright yellow and ruddy browns and greys, their form less mechanical, their arrangement more scattered. Here and there a withered frond, which was a giant amongst its fellows, ere the petals of the bramble blossoms fell away at the swelling of the coming fruit, protrudes from amongst the darkest recesses of the tangled bushes, and forms a bright spot amidst the blackness. No lack of picture subjects here. Back through the deeper forest huge trunks of centenarian oak and beech trees moss-grown and weirdly twisted may suggest a picture, especially if gipsy figures or rustic children are at hand and are deftly posed. Out of the forest and down the breezy hill slope, oak and ash and hedgerow elm stretch their almost naked limbs into the grey air, and darkly cast reflections in the pool of rain-water which has gathered so inconveniently at the gateway below. Here, heedless of wet feet and muddiness, cattle await the coming of the farm man to take them home for milking. Through the gate and down the lane the odour of wet decaying leaves is everywhere, and then the scent of a wood fire tells of the close vicinity of the cottage or farm. Do you know these two peculiar odours, never met with anywhere as in our English rural places, and never so sweet as in late autumn? What have odours to do with picture making? Well, if not directly, indirectly they have much to do with it. One must be thoroughly in love with the country (most Englishmen are), and must be in just that frame of mind which can greet and welcome every sign and characteristic of rustic life, if one would succeed in catching Nature in her most picturesque aspects. Well, then there's the cottage with its wreath of blue smoke, its swing gate approached by two or three stone steps, under which a tiny stream of water finds a way and makes a playground for ducks and geese. The doorway and latticed porch is not so gay as when roses and honeysuckle embowered it and scarcely left space for entrance, and the trim garden looks a trifle neglected. Still, there is wonderful colouring and cause for pause. But we are bound further down the lane, which, steeply descending, passing another cottage or two, reaches the level that lies at the foot of the hill. Here winds a river, with perhaps a bridge or a ford. Reedy fenland and water meadows extend on either hand; willow trees flourish here, and a wild confusion of water plants and greater trees of statelier growth bend over the stream, which, with many a streak and ripple, reflects them. The grass sward on either bank, which in June was smooth and velvety as a well-kept lawn, in the fall of the year gives way to the production of rank weeds—thistles, with tufts of downy seed, nettles still green and full of vitality, broad leaves of comfrey, and the whitened stems of coarse grasses. And all the long regiments of upright reeds, in summer so green, so regular, almost monotonous, are severed and broken, worsted in the fierce conflict with wind, rushing water, and their own expiring strength; but to the artist they are more beautiful beaten down, matted together, some still remaining upright—such variety, irregularity, contrast! Beautiful as is the riverain at all seasons, it is never so charming as in the dying year. Woodland, hillside, moor, and marsh have all good claim for attention at this time of year. We have only suggested a very few aspects amongst the many.

And what opportunities the autumn skies present! At early morning, when the horizon is bright and like a curtain, heavy brown and purple clouds lift and roll off, suggesting for a moment the appearance of a photograph in which the cloud negative has been badly joined to the landscape, and a little space of white left between; and as the sun gets higher we have dark effective masses of cloud broken up with strong lights, or long rolling columns of grey cumulus, with little light about them, dull, heavy, and low, until later in the day the sun sets in a manner which forecasts rain, soft and yellow, behind a bank of mist or amidst long bars of red and gold, with radiating beams which, high above, tinge the dappled sky with purest hues.

And amidst all the localities hinted at, in every scene be ever on the alert for the thin grey mists which rise and float upwards, a delicate film of tenderest grey, or stretch out across the glebe, gathering thicker and whiter, enveloping each object by degrees, then growing duller with the failing light, and we seek the nearest road home through the gloaming.

If you would amongst your pictures secure the most precious things of Nature, get rid of the idea that she is only beautiful in the heyday of summertime, and go forth into the light of things and seek for yourself at the nearing of winter or in the fall of the year,

> When autumn woods breathe not a sound,
> And Nature's self finds sweet repose.

A Dark-room.

By Kenneth Anderson.

Mr. C. H. Bothamley truly says, in his excellent book entitled the "Manual of Photography," that the dark-room is a bad name and one that is apt to be misleading to a beginner. All so-called dark-rooms have either a red or an orange light, so they cannot be really dark. But we must howl with the wolves, and call the developing room the dark-room in future. A dark-room is essentially a room that is dark, that is, a room from which all

actinic light is excluded. Then the question of how the place is to be illuminated may arise. Artificial lamps, I think, are undoubtedly the best way of giving light to work with. Lamps having ruby or canary glass are the ones to be used. Red light is best, as very sensitive plates, such as isochromatic, may be affected by the other colour. Then comes the question of what lamp should be used. For those whose purse is not of the largest, I can recommend the hock bottle lamps, in which candles should be burnt. For the more expensive, Lancaster and Fallowfield have several good sorts. If your dark-room should have a window, it must be carefully stopped up if you intend to work by artificial light. Suppose your window be a yard square, buy some ruby and canary fabric; two sheets of ruby, 38 in. by 38 in., and one sheet of canary of the same dimensions. Nail first one sheet of ruby fabric, then the canary, and then the other sheet of ruby. Now, the light that comes through this ought to be non-actinic in the highest sense of the word; but as you intend to use a lamp, you must cover the whole over with two thicknesses of fine brown paper. If this is all nailed on properly I may safely say that not a single ray of any light will enter the room even in the brightest sunshine, and even if any does it would hardly affect your plate.

Now as regards a working bench and sink. You may buy both combined at Adams's for £2 12s. You can set up an ordinary table or long bench for working on, and fix up a sink, with a pipe leading into a hole in the ground out of doors. It is best, if you cannot take your drain into one of the drains from the house (supposing the dark-room to be away from the house), to dig a hole about two feet deep just outside the wall of the dark-room. The water will be well out of the way there, and, provided you cover up the hole, your drain will not be in the way. Living in Kent, I use the water supplied by the West Kent Water-works, which contains a fair quantity of chalk, but I never found that it affected the negatives in any way. But as regards water there is one point I would caution any who live in this county—that they should always make up their developers with distilled water. I find that hydroquinone and caustic soda cause a precipitate in conjunction with the chalk. I have a working bench eight feet long, which I should recommend be divided up as follows. Four feet of it should be partitioned off for wet work, such as developing; two feet of the remainder should be used for dry work, such as filling dark-slides, etc.; the remainder should be used for storing plates and papers.

On the wall, above the wet work division, should be placed a shelf three feet long and six inches wide. On this shelf should be stored developers, etc. The door should be behind and to the right of the operator, and should fit tightly so that no draught may get to the photographer while at work, and no light to the plate. Indeed, it is often desirable that there should be a curtain thrown across the door to protect both. Immediately on your right, as you enter, should be the sink, if it is separated from the working bench as mine is. A space should be left between the sink and the wall against which is the working bench. This space should be filled by a sloping, grooved board, on which dishes should be left to drain. Above, or better below, so that none may spill into the dishes, should be a shelf for hyposulphite of soda *only*. Near this shelf may be another for a tin to hold the hypo crystals, or for a bottle to hold a stock solution. Over the dry work bench should be another shelf to hold hydroquinone, pyrogallic acid, caustic soda, chloride of gold, etc., in salts or in bottles of stock solution, which are not always in use.

Now comes the question, "What developer am I to use?" There are so many different developers at the present day that it is hard to know which is the best one to use. I believe that for all-round work you can get nothing that will beat hydroquinone. Though I have never used it, I believe that eikonogen is very good. Pyrogallic acid, with soda or ammonia, is very good, though it requires considerable care. For plates Rodinal gives satisfactory results, but ferrous oxalate is the best for papers.

In the dark-room (working with quarter-plates) should be three ebonite dishes for developing, water, and alum; one shallow half-plate porcelain dish for hypo; one deep ditto for toning; one 1 oz. measure; and a 2 drm. ditto. If you can manage it, it is advisable to have a ventilator in the wall; but it is difficult to prevent the light entering. If you have no ventilator, you must leave the door open as much as possible, or else you will suffer from bad air, which will soon put an end to your proceedings. I trust these hints will be of use to some one.

To Arcadia with a Camera.—IV.

By Lieut. G. Harvey.

During the whole course of their educational career, probably not one photographer out of a thousand ever heard of Glynde, and yet it should have been mentioned both in history and geography. To the photographer the neighbourhood for many a mile round must possess unbounded interest, for quaint subjects, old-time houses, valuable curiosities, majestic views, and snap-shots are scattered in luxurious profusion, and is truly a dream of exquisite beauty. Glynde is fifty-eight miles from London, and, luckily for the photographer, possesses a railway station. It is on the L. B. and S. C. Railway, and can be done in one day, or Saturday to Monday trip. If one should decide on the former, a train leaves London Bridge at 6.30 a.m., reaching Glynde in time for a half-past eight breakfast, and the last train home leaves at 9.16 p.m., giving a nice long day, and comparatively speaking, plenty of time to get about. Do not on any account miss the great treat in ascending Firle Beacon. The view is simply astounding, almost comprising the whole county, and including a fine expanse of ocean with Seaford and Newhaven shipping. There is no properly called road, but the track is good, and if you hire one of the happy-go-lucky native vehicles, perfectly practicable for even their procedure. Firle Church (near Firle Place, the seat of Viscount Gage) contains some brasses and tombs, and you may with advantage expose a few plates. But the "happy hunting ground" is Alfriston, a large and interesting agricultural village. (The snap-shot man would revel in Alfriston.) I won't go deep into particulars, as our Editor's space is valuable, but will only mention objects of most interest, and which could not possibly be left out. Make straight for the centre of the village and you will see the quaintest inn in England. It is called The Star, and dates from 1520, and here you will do more exposing in one hour than is ordinarily possible in half a dozen hours, for let me tell you that divers curious wood carvings decorate the house inside and out. Do not forget to ask, and you will be shown over the interior. I stayed a night here and the surroundings so impressed me that I dreamed I also belonged to 1520. At the corner next a lane is a large red wooden lion, once the figure-head of a Dutch ship wrecked somewhere near Beachy Head during the last century, and doubtless brought here as a savage adornment to the village. If you can only master the broad tongue of the natives, you will hear more of this beast, and some of the yarns will almost make your hair stand on end. Now cross over the river—there is a bridge half a mile N.E. of Alfriston—and make for Lullington. Expose a plate on Lullington Church, which, measured externally, is twenty feet square, a very small place of worship, nice, I should say, in winter, but a veritable bake-house in summer. At one time, I was told, it was a large building.

Passing through Litlington—nothing to detain you here—you will reach West Dean. On the south wall of West Dean Church (Norman) there is a very fine mural monument, about ten feet high, date 1625. In the opposite wall is a canopied tomb of Robert de Dene (Sackville family). The font is extremely curious, and is of unusual size, permitting baptisms by immersion. Expose three or four plates. Put on your armour, and gird up strength for exposing on an old parsonage house of the fourteenth century. It adjoins the churchyard, and is now partitioned off into labourers' cottages, and a crying shame it is too, for some of the rooms contain some very fine old stonework. You can get access to this, and take my advice and expose a plate or two. It will be difficult, but such an opportunity is not to be lost. Returning through Litlington you will notice, a little from the road, Charleston House, at one time residence of an old Sussex family. An Early English building, said to have been the chapel, remains in fair condition. Expose. The road from here to Beachy Head, twelve miles, through Crow Link and Birling Gap, will be fatiguing, because of the numerous ascents and descents, but if time is of no consequence, you will receive ample compensation, for the views both seaward and inland are glorious. There are also remains of an old British camp, tumulus, and cemetery. If you should be in Alfriston later in the day, go into the church and secure a negative of the east window, which is very fine and worth a plate. One word in conclusion. If you only go for the day don't attempt any interior work, of which there is so much, but be contented with outdoor work, and leave the villages further away, until some time that you can spend a few days and do it thoroughly.

Exhibitions.

Society.	Entries close.	Opens.	Closes	Address of Secretary.
P.S.G.B.	—	Sept. 26	Nov. 10	The Assist. Sec., 5a, Pall Mall East
Camera Club...	—	Oct. 17	Dec. 8	G. Davison, The Camera Club, Charing Cross Road, W.C.
Todmorden Scientific Assoc.	—	Nov. 5	—	Jno. T. Binns, 3, Garden Terrace, Todmorden
Hackney Photo. Soc. ...	Oct. 29	Nov. 15	Nov. 17	W. Fenton Jones, King Edward Road, Hackney
Leytonstone Camera Club...	Oct. 25	Nov. 10	Nov. 12	A. E. Bailey, Rose Bank, South West Road, Leytonstone
Brixton	—	Nov. 17	Nov. 19	F. W. Levett, 74, Geneva Road, Brixton.
Stanley Show...	Nov. 5	Nov. 18	Nov. 26	H. Smith, 29, Finsbury Pavement, E.C.
South London	—	Nov. 24	Nov. 26	Chas. H. Oakden, 51, Melbourne Grove, E. Dulwich
Exeter Amateur Photo. Soc	Nov. 12	Nov. 24	Nov. 26	Rev. J. W Sparshatt, Fairfield House, Alphington Road, Exeter
Tunbridge Wells	Nov. 14	Nov. 23	Nov. 24	J. Chamberlain, 14, Calverley Park Gardens, Tunbridge Wells.

Societies' Notes.

We have received, at the moment of going to press, the catalogue of the Leytonstone Camera Club Exhibition, from which it appears all the best workers intend to exhibit, such as Austin, Kidson Taylor, Hodges, Gear, Court Cole, Harding, Mrs. Clarke, Leeson, Dresser, Karl Greger, Byrne, Mendelssohn, Winter, Alfieri, Hinton, etc. The exhibition will be held on the 10th, 11th, and 12th inst., and will be well worth visiting. A very good diversity of entertainment is offered. Musical and lantern items figure in the bill. Refreshments can be obtained on the spot, and the exhibition will be opened by Lady Brooke on the 10th at 6 p.m., and on Friday and Saturday at 7 p.m.

The Birkenhead Photographic Association are holding their annual competition of prints and lantern slides, and have a good show of talent as judges.

The Jersey Amateur Photographic Society has flitted, and their address is 19, Queen Street, St. Heliers. Mr. J. Andrews, B.A., is Acting Secretary.

Under the auspices of the Uttoxeter Amateur Photographic Society, Mr. Gambier Bolton gave his lecture on "Wild Animals in Captivity and Domesticated Animals," on Friday evening last in the town hall. The lecture was illustrated by over 200 of Mr. Bolton's well-known and celebrated slides. The lecturer, who was introduced by the President of the Society, was most enthusiastically received by a large and appreciative audience. The slides were shown by a powerful limelight lantern, most ably operated by Mr. G. C. Wallis, a member of the Society. The general arrangements were carried out by Mr. R. T. Walker, Hon. Secretary.

The improvement in the attendance at the Pall Mall Exhibition continues. The number of visitors in the past week was 1,842, making 8,799 since the opening day. On Wednesday night last, in spite of the heavy downpour of rain, there were 190 in the gallery to see the slides lent by the Amateur Photographic Field Club.

On the third day, Thursday, 17th inst., the Hackney exhibition will be opened at midday, to allow of those living at a distance to see the same. The company at the opening ceremony promises to be very good. As already announced, Sir Albert K. Rollit, M.P., will open, and numerous well-known men, including Sir Charles Russell, M.P, are to be present.

The annual exhibition and dance of the Holborn Camera Club will take place at Anderton's Hotel on February 18th and 20th, 1893.

A photographic section of the Malton Field Naturalists' Society is in course of formation, and a special committee has been formed for obtaining photographs of geological interest.

The Brixton and Clapham Camera Club have secured the services of Messrs W. Bedford, F. P. Cembrano, and Andrew Pringle as judges for their exhibition, which is to be held on the 17th, 18th, and 19th inst., at The Clarence Rooms, 376, Cold Harbour Lane, Brixton.

Mr. F. W. Pilditch, Hon. Secretary for the new Aston Photographic Society, requests us to correct a slip of last week. His address is 133, Wills Street (not Wells), Aston, Birmingham.

The Tunbridge Wells Amateur Photographic Association have secured the services of Messrs. Gale, Davison, and Mayland as judges for their exhibition, which will be opened from the 23rd to 25th inst. The latest date for entries is the 12th inst. Some very fine work from some of the most prominent exhibitors is to be shown. Mr. Shapoor N. Bhedwar's fine Indian pictures will also be there. In the apparatus section, Messrs. Watson, the Paget, Smith and Son, Dore, Gotz, Powell, etc., will be *en evidence*.

The Fairfield (Liverpool) Camera Club had a very successful lantern exhibition on 31st ult., by Mr. Fred. Clibborn, entitled "Two in Touraine." Their annual Club competition for prints and slides is to be held on December 9th.

The Newcastle-on-Tyne and Northern Counties Photographic Association will hold a conversazione, with exhibition of prints, stereo and lantern slides, on the 11th inst., the occasion of the opening of the new rooms at the Art Gallery, Newcastle.

A course of practical instruction in photography, under Messrs. Howard Farmer and C. W. Gamble, will be held at the Birkbeck Institution, commencing Monday, November 14th. The fee for the complete course is very low, only 7s. 6d. to non-members.

A new society has been formed at Scarborough under very good auspices. Mr. N. Todd, 18, Victoria Road, is the Hon. Secretary.

The latest date for sending in entry forms for the Exeter Amateur Photographic Society's exhibition is the 12th inst.

The Sunderland Camera Club has held its first social. The room was tastefully decorated with curtains, fans, etc., and there was ranged round the walls a collection of photographs, some of which had been lent by the Editor of the Amateur Photographer. These and a number of stereoscopes attracted considerable attention. Among those who lent exhibits were Messrs. F. S. Cowper, Oscar Gad, W. Milburn, H. A. Brown, and Councillor J. G. Addison, who lent a very valuable collection of American photographs. A concert followed, over which the President of the club, Mr. W. Milburn, presided. There was a large attendance of ladies and gentlemen. Miss Beatrice A. Armstrong opened with a pianoforte solo, and she was followed by a song by Miss Laidman. Mr. Hardy's mandolin solo was much admired, and Messrs. W. Cranston and James Tait were very successful in their efforts to entertain the company. The same ladies and gentleman, with the addition of Messrs. H. T. Hardy and G. T. Brown, provided the second portion of the musical programme. During an interval some limelight views of Borough Hill Horse Fair were shown by Mr. W. Milburn. There was also a selection of views from photographs taken by Mr. Edgar Lee, of Newcastle, and some of which gained the prize medal at the recent Pall Mall Exhibition of the Photographic Society of Great Britain. The social was in every respect a success.

Societies' Meetings.

Barrow.—A meeting was held on the 3rd inst., about 170 persons being present. Mr. J. Edge occupied the chair in the absence of Mr. A. Blechynden (the Chairman of the section) through illness. The Prize Lantern Slides from the Editor of the Amateur Photographer were shown on the screen by Mr. J. Timms with his triple lantern, and were very much enjoyed by the audience, especially the slides contributed by Mrs. S. F. Clarke, which were gems and elicited much applause, the general opinion being that they were certainly the best in the class of portraits. The sailing yachts and many of the architectural pieces were very fine. The sea pieces and mountain scenes in Arran also had many admirers, as did the slide "Waiting." Several of the American slides were very fine, but the one with sun on was considered to be rather odd (to put it mildly). Mr. W. Dunlop (Vice-Chairman of the section) gave a clear and lucid description of the pictures as they were shown on the screen, and also gave information for the benefit of the members as to the

plates used and the method of development by which they had been produced. The lantern was well managed, and both curtain and dissolving effects were introduced. A vote of thanks was accorded to the Editor of the AMATEUR PHOTOGRAPHER for the use of slides, also to Messrs. Edge, Dunlop, and Timms. These public exhibitions are becoming more popular every time they are held, and we may soon be obliged to have larger accommodation.

Blackheath.—The second ordinary meeting was held on the 1st inst., when a lecture and demonstration on "The Eastman Company's Products" was given by Mr. A. C. Baldwin, Mr. J. T. Field being in the chair. The lecturer described the rollholder and the various kinds of Kodaks, and then gave an interesting description of the method of manufacturing celluloid films. The factory is fitted with twelve glass-topped tables, each 80 ft. long and 41 in. wide; these are coated with liquid celluloid by means of a machine which travels the whole length of the tables, running on steel rails at the sides, and being drawn along by endless chains, worked by an electric motor. The coat of celluloid is next dried by means of fans, and then coated with the sensitive emulsion, which is spread in the same manner as the celluloid, but at a slower rate. When the emulsion is dry the film is stripped from the tables, and at the same time wound upon a large spool, from which it is re-wound on to another similar one, passing in the meantime over a table of ruby glass lighted from the underside by an electric lamp. During its progress it is carefully examined, any defective portions being cut out or marked. After this it is rewound on to a series of small spools, being slit by knives during the process. Each of these small spools, of course, contains 80 ft. of film of the width of the spool, and this is again rewound in the proper lengths required for certain numbers of exposures on the spools that are used in the rollholders. After mentioning bromide paper, Mr. Baldwin then spoke of the gelatino-chloride paper made by this firm and called "Solio" paper. He toned two batches of prints, one in the combined toning and fixing bath and the other in the sulphocyanide bath, giving some valuable hints while doing so. With regard to the depth of printing, if the prints are to be toned in a sulphocyanide bath they should not be so deeply printed as for the combined bath, while for the latter they should be rather less deeply printed than for any other bath, such as borax. When toned and fixed in separate baths, an alum bath is necessary between. If prints are to be glazed, they should be printed deeper than for a matt-surface. Squeegeeing on matt-surface celluloid is recommended for matt finish, and on glass or ferrotype plate for glazed surface. In the combined toning and fixing bath the fixing takes place first, and is complete in about two minutes; therefore, by the time the required tone is obtained the prints are sure to be properly fixed. They should be toned face downwards in this bath. The sulphocyanide bath must be freshly made from pure chemicals, and with this very fine purple tones can be obtained, the combined bath only giving warm tones. The prints must be thoroughly and quickly washed; excessive washing destroys the gelatine. The printing frames should be filled in subdued light or in the dark-room, and should be backed with waterproof paper. To mount prints that have been squeegeed on to a support of any kind, apply a thin solution of Scotch glue to the back with a piece of flannel when print is nearly dry. When quite dry, strip off print, damp mount, and lay print down. When waterproof backing of any description is applied to a print it must not be done until print is nearly dry, as otherwise the moisture will be unable to evaporate.

Croydon (Camera Club).—On 4th inst. the Robinson slides were shown by Mr. Hastings to an audience of members and friends, numbering between two and three hundred. The lecture was enlivened by music from a string band under the direction of Mr. Isaac. The lantern was as usual very efficiently handled by Mr. G. R. White. Subsequently a number of slides by members were thrown on the screen by the lanternist, and described by the President, Mr. H. Maclean. Mr. C. F. Oakley's "Sweetmeats" and "Hever" (developed with Rodinal), Mr. C. Bray's "Bracken" and "Hay Pie," Mr. H. E. Neeve's "The Binder," "My Dog," and "Ploughing" (the last a very successful view taken during a club excursion), Mr. Packham's "Young Thief," Mr. Corden's "Lord Mayor," "Army," and "Lightning" views, Mr. Burrow's Landseer views, and those of Mr. Sargeant taken at Portsmouth seemed most appreciated. November 7th Mr. Charles Hussey gave a graphic sketch of the delights of stereoscopic photography, and a complete resume of the chief operations requisite and of the various kinds of apparatus used. He also showed and described the making of a printing frame, newly devised by himself, by means of which stereoscopic positives may be printed by contact without necessitating any cutting and transposing of the prints. This improvement will be fully appreciated by all stereoscopic workers.

Croydon (Microscopical, Photographic Section).—Ordinary meeting on 4th inst., Mr. Sparrow in the chair. The attention of those present was drawn to the annual soirée of the club to be held on the 23rd inst. The evening was devoted to a discussion on hand-cameras, the practical advantages and defects of various systems. For purely hand-camera work, such as street scenes, the type known as the "magazine" with a lens of short focus, 4¼ to 5 in., was considered the most convenient; whilst for general work a camera with plate-holders a longer focus lens was preferred. The Chairman, in the course of his remarks, described a novel form of plate-holder he had used for several seasons, constructed from the designs of Mr. Sargeant. The shutter, instead of sliding out, was hinged and laid down on the bottom of the camera, the opening and shutting being effected by a small lever outside. The advantages claimed were that it could be made lighter and more compact than the ordinary form of dark-slide, that it could be manipulated quicker, that no light could reach the plate when in the camera, as the form of construction allowed it to be entirely closed in; it was, however, not possible to use a lens of short focus, as the lens front could not be brought up sufficiently near.

Hackney.—The weekly meeting was held on 1st inst., Mr. J. O. Grant in the chair. The Society decided to enter for competition slides as per *Hand-Camera and Lantern Journal*, slides to be selected at the first meeting in December. The Hon. Secretary said he had tickets for the Benevolent Association, and he hoped the members would support it. The result was that all the tickets were sold. The Hon Secretary showed Lund's varnished label-book, and book for holding unmounted prints made by same firm. The members then passed a resolution that Mr. Hensler carries with him the best wishes of this Society in his trip to New Zealand. The Hon. Secretary hoped that he would soon return, and safely, as he had been associated with Mr. Hensler from the founding of the Society. Mr. Hensler was much affected by what had been said, and said he should never forget the many happy hours he had with the Society, and would communicate with them. Members' work was shown by Messrs. Dean, Nunn, Moore, Sodeau, Roofe; and Mr. Beckett showed the pictures he had taken by gaslight at the last meeting. A question was asked as to whether Ilford lantern plate (black tones) was a chloride or bromide paper. Mr. Beckett said it was a bromide. Mr. Wilks was nominated. Mr. Wise asked which was the best way to use Amidol. Mr. R. Beckett advised using it dry. Mr. Carpenter then read a paper and gave a demonstration on "Lantern-slide Making." He said a very great point was to get purity in the whites. He covered about one-eighth of an inch of rebate with black paper so as to detect fog. His own formula was: Eikonogen ¼ oz., carb. potash ¼ oz., bromide potash 5 gr., sulphite soda 1 oz., boiling water to 10 oz.; allow to cool. Generally diluted it with equal weight of water. For warm tones he preferred hypo, and mentioned the ten per cent. formula given by Thomas; advised plenty of good yellow light, and objected to intensification. Some lantern plates of Thomas's were then developed. Mr. Gosling asked whether chloride plates could be satisfactorily developed with pyro. Hon. Secretary said he had done some. The Hon. Secretary announced that next meeting was a lantern night.

Holborn Camera Club.—The meeting on November 4th, Mr. Fred. Brocas in the chair, had an interesting discussion, opened by Mr. Bayston, on "Hand-cameras."

Huddersfield.—The fourth annual general meeting of the above Society was held on 3rd inst., Surgeon Major Foster, the President, in the chair. The Secretary read the report and balance sheet, the latter showing a balance in hand of £1 6s. 3½d., as against £1 17s. 7½d. on the other side last year. Mr. Clarke then proposed the amalgamation of the Society with that of the Huddersfield Naturalists' Society, which after some discussion was carried.

Kensington and Bayswater.—A meeting was held on the 7th inst.; Mr. Seales presided. Mr. G. Bursnell gave a demonstration on "The Platinum Toning of Silver Prints." He clearly explained the difference between a print on platinotype paper and silver paper toned with platinum; the former consisting of platinum only, and the latter—however well the toning may have been effected—of an alloy of silver and platinum. He claimed that a platinum-toned print will keep longer than a gold-toned one, that in toning more of the silver is replaced than in toning with gold, and that the platinum toning bath will keep almost indefinitely. The bath he has found of most use is one composed of chloroplatinite of potassium, 1 gr.; citric acid, 10 gr.; water, 4 oz. This is an improvement over the old bath, which contained nitric acid; this last, even when diluted, having a more or less injurious effect on the gelatine. If a warm tone is desired, add ten more grains of citric acid and dilute to eight ounces of water. In printing for warm tones it is necessary to over-print more than for black tones. The fixing-bath should be made slightly alkaline with ammonia. Mr. Bursnell proceeded to give his formula and method of preparing a paper specially suited to platinum toning. Plain Saxe paper should be obtained and first salted with the following solution:—Gelatine (Nelson's No. 1), 12 gr.; water, 1 oz.; chloride of ammonium, 4 gr. When dissolved add 2 dr. of negative varnish. The paper should be hung up to dry, and then sensitised with the following solution:—Citric acid, 50 gr.; nitrate of silver, 2 dr.; water, 2 oz.

Lewes.—The monthly meeting was held on the 1st inst., the Pre-

sident (Mr. J. Tunks) in the chair. It being a members' lantern night, a number of slides were shown in the society's lantern, the makers giving the description as they appeared. Among the most admired were those by Messrs. Bedford, Tunks, and Young. It was announced that the December meeting would be on Friday, the 2nd, instead of on the first Tuesday, as usual. Any friends of members interested in photography will be welcome.

Lewisham. — On the 1st inst. the Hon. Secretary (Mr. R. W. James) gave a demonstration, "Lantern Slides by Reduction." He showed three different forms of apparatus. The first was a frame at one end of a board to hold the negative and ground-glass, with an ordinary quarter-plate camera on guides at the other, and is for use with artificial light only. The second was an ordinary fixed focus apparatus, and the third an ordinary camera placed on a board so that it could be shifted backwards and forwards. On the other end of the board was a wooden tunnel with negative in end. The two latter methods could be used with artificial or day light. As, of course, daylight was not available at the time of meeting, Mr. James could only show how to use the apparatus with artificial light. He made two lantern slides from whole and quarter plates by the aid of magnesium ribbon hung in strips on a frame about 7 in. from negative.

Liverpool (Y.M.C.A.)—The weekly meetings of this club during the past month have been favoured with increasing interest, due to the excellence of the lectures given by Mr. G. T. Blenkinsop and Mr. T. Crosbie. The usual monthly meeting was held on 2nd inst., when Mr. L. Hill gave a short history of photography, followed by a demonstration of photographic enlarging by magnesium light. Mr. J. Fowler Shone occupied the chair. The winner of the prize in the October competition for the best set of six silver prints—landscapes—is Mr. Eben. Smith, who received high praise from the judge, Mr. Wm. P. Christian, for the all-round merit of the prints submitted.

London and Provincial.—At the meeting on the 3rd inst., Mr. G. W. Atkins in the chair, Mr. Haddon gave an account of an experiment he had carried out as to the action of the red end of the spectrum on the haloid salts of silver, and with gelatino-bromide paper. His results proved that the red light had neither undone the work effected by white light nor increased its action. With gelatino-chloride paper there was in red light a distinct change in colour of the image caused by white light, but on toning and fixing there was no difference to be detected, the conclusion being that the change was not a chemical one but physical. Mr. Foulkes-Winks' paper on "Printing-out Papers" was read in his absence by the Hon. Sec. Considerable exception was taken as to the results arrived at, and an interesting discussion ensued.

Llanelly.—On the 2nd inst. a lecture was delivered by Mr. John Daniell, the Hon. Secretary, on "Photography a Recreation." The chair was occupied by Mr. Ernest Trubshaw, J.P. In his opening remarks the lecturer referred to the need for recreation, and the desirability of selecting such methods of spending leisure as were harmless and at the same time pleasant and profitable. He recommended photography for this purpose with much confidence, giving several reasons for doing so. He then proceeded to give a short account of some apparatus, ancient and modern, and explained their use, and then touched lightly upon the history of the modern dry-plate. The principle of development was illustrated experimentally by throwing the image of an exposed plate on a screen, the progress of development being witnessed by the whole room. The difference between positive and negative pictures was explained, and two slides showing the distinction were shown by the lantern. The lecturer recommended the smallest size of plate for general use, on the ground of portability, moderate prime cost, small cost of maintenance, and suitability for lantern-slide making and enlargement. The ease and simplicity of the latter process were demonstrated; an enlargement of a negative of a barque in full sail was made at the lecture table by Mr. Ernest Samuel, who ably assisted the lecturer. This was framed, and at the close was handed round and was much admired. A large number of slides were then thrown on to the 15 ft. screen by the oxy-hydrogen biunial, owned and ably manipulated by Mr. Major, F.C.S. These were illustrative of North Devon scenery, taken by the lecturer, and were fully appreciated. Some local scenes and celebrities were also included, the local "bits" causing much amusement. There was a large, select, and appreciative audience.

North Surrey.—The exhibition of the work of members and the competition for the Whitby prize of a guinea each for the two best sets of six prints and the society's certificate for the set next in order of merit were held at the last meeting on the 1st inst. There were sixteen entries for the competition, and the prints sent in, with those for exhibition only, made quite an imposing show. The competition was very keen, the result of the judging showing only a difference of five marks between the first and third best sets. Mr. Lewis Wolff, under the *nom de plume* of "Achromatic," was awarded the first prize, Mr. H. Senier ("Columbia") the second, and Mr. W. Rouch ("Pyro") the certificate. The six prints shown by Mr. Wolff were bromide enlargements of church interiors and village scenes; those by Mr. Senier, 5 in. by 4 in. prints on bromide and Eastman Solio paper, landscapes and interiors, the best being the banqueting room, Haddon Hall; and those by Mr. Rouch, bromide enlargements of marine and forest scenes. Taking the exhibits as a whole, they reflected the greatest credit upon the members, and proved that the idea to hold the combined competition and exhibition was fully warranted. It may be remarked that ordinary albumen prints were conspicuous by their absence, eight-tenths of the exhibits being either platinotype or bromide. Among the pictures sent in for exhibition only, those by Mr. T. J. Bright were universally admired, his "View from London Bridge," and "A Pastoral Scene in Essex," being of rare merit. By the courtesy of the Committee of the West Norwood Constitutional Club, in whose rooms the society holds its meetings, the exhibits were allowed to remain on view for a week, and many friends of the members, and others interested in the art of photography have availed themselves of the opportunity thus afforded.

Oxford.—A meeting was held on 31st ult. Mr. C. J. Mead-Allen, S. Catherine's, gave an interesting lecture on the Isle of Wight, illustrated by lantern views. The next meeting will be held Wednesday, November 16th, when Mr. F. W. Brown, B.A., University, will give a demonstration on "Solio Paper." All communications should be addressed to the Hon. Secretary, A. Eglington, Lincoln College.

Putney.—A special meeting was held on the 24th ult., Dr. Sheppard in the chair. In spite of the unfavourable state of the weather a very fair number of members and visitors had assembled to hear Dr. Jeserich's paper on "Photography Applied to the Detection of Crime." The paper was, in the absence of the author, very ably read by Dr. Farrar, and was followed throughout with unflagging interest by everyone present. It was illustrated by a series of striking lantern slides, which clearly showed that photography is well ahead of the *fin de siècle* criminal. A series of lantern slides from Australia, South Africa, and India was then shown. In addition to a high standard of technical excellence the slides had the advantage of representing views of scenery and life quite new to many of those present. Altogether the slides reflected the highest credit, both artistically and technically, on the gentlemen who have been kind enough to forward them to this country for the use of photographic societies. The paper and slides were lent by the Central Committee of the Affiliated Societies of Great Britain, and are part of a programme provided for the use of those who have joined the Affiliation. The programme, which is of a varied character, will be found of invaluable help to Secretaries in filling up their cards of fixtures, and will be a practical inducement to other societies to join the Affiliation.

Richmond.—At the meeting held on the 31st ult., the President in the chair, Mr. Ramsay showed Middlemiss's frame for printing slides by contact from part of any sized negative; a very simple and useful adjunct to the dark-room. Mr. J. D. Gibson brought some slides which he had made on chloride plates, following the formula, etc, as demonstrated at a previous meeting; the slides were very patchy, and many of them too red in colour. He wanted to know the cause of the patchiness. Mr. Cembrano thought that the magnesium must have been held too close to the negative and not moved about during the exposure, thus causing uneven illumination. The subject for discussion, "Preparing Work for Exhibition," was opened by Mr. P. Ennis, who said that foremost of all the quality of the work must be the very best, and he emphasized the necessity of being original in one's style. Most workers left the printing and mounting of their exhibition work for the last moment, which was certainly not always conducive of the best results; he therefore recommended that one should start early preparing one's exhibits. A great deal of care was necessary in suitably mounting and framing, as quite a number of prints were often spoilt by unsuitable framing. Mr. Williams thought the whole question lay in a nutshell; first get a good negative and then a good print. Mr. Ramsay added that exhibits were often too much prepared; in other words, that too much hand-work was put on them. Mr. St. John Hunt inquired which would be the best kind of frame to have. Mr. Cembrano replied that the frame should be simple, and that it should harmonise with the print. The object of the frame was to separate the picture from the surroundings; indeed, it might be called the boundary line of the picture. It was a great mistake to have much gold in a frame for a photograph. It was fatal to use a moulding which by its richness or colour should attract the eyes before the picture was seen or thought of. Mr. Alabaster showed a frame he had sent to an exhibition. He thought that the mounts should be made to suit the prints; he preferred toned mounts. Mr. Gibson remarked that it was a difficult thing to find suitably toned mounts. Mr. Such suggested that the size and shape of the frame should be considered. He believed that some sizes had a better chance of being hung, because they fitted better. He further remarked that "hangers" should endeavour to harmonise the colours of the frames as well as the

tones of the prints on the walls of an exhibition. The President read a question which had been put by one of the members: "A negative having been imperfectly washed and put away, a mouldy deposit appears on the film after a few months. This deposit seems insoluble in water, the plate having been soaked three days without result. How can it be cleared?" Mr. Williams advised soaking in hot water. Mr. St. John Hunt suggested rubbing the film with cotton wool. Mr. Harris doubted the efficiency of this treatment, as he had been unable to remove the deposit with a sponge. Mr. Cembrano thought that re-soaking in hypo, and then washing thoroughly, might answer.

Rotherham.—Monthly meeting on 1st inst., Dr. Baldwin (President) in the chair. Good attendance of members. Several volumes were promised for the society's library. In view of the lantern season it was decided to form a representative collection of slides of members, and to make the selection at the December meeting. Photo literature, etc., were distributed. Mr. W. Firth afterwards gave a paper on "Amateur Experiences."

Sheffield.—The ordinary monthly meeting was held on the 1st, Mr. B. J. Taylor in the chair, when after the routine business the question of a dark-room was brought before the members, and after a very heated discussion it was resolved to postpone the matter until next meeting and decide by ballot; after which a series of lantern slides was passed through the lantern by Messrs. Furness, Hibbert, Camp, and Bromley, showing the effects gained by the different developers now in use amongst photographers. Mr. J. W. Charlesworth operated the lantern.

South Manchester.—The monthly meeting was held on 31st ult., the Vice-Chairman, Mr. W. Linnell, presiding. Messrs. Hutton, Macbeth, and Wade were elected members of the society. Mr. Lawson, of Newton-le-Willows, exhibited a new saturator invented by himself. The instrument in its present form can be placed inside the body of the lantern, as the nipple and lime holder form part of the saturator; it is intended to burn the ordinary commercial benzoline, thus doing away with hydrogen, an oxygen bottle only being required. Among the advantages claimed for it are its perfect safety in use, and that a better light can be obtained than with any other limelight apparatus with either one or two jets. Mr. Wade read a paper on "The History of a Lantern Slide," in which he gave an account of his method of making it. He said the making of a lantern transparency required the greatest technical skill, but, when obtained, the beauty of the picture was much enhanced, and when thrown on the screen usually gave rise to expressions of the warmest admiration. The lecturer proceeded to give an account of the various ways by which a lantern transparency could be produced, the best negative for this work being one "full of detail, rather thin and clear." He considered the gelatino-bromide plates the best for general use as capable of giving a great range of tones from black to red, transparent shadows, delicate half-tones, and as being very free from technical defects. A very thin negative is better printed on a gelatino-chloride plate. With regard to the diversity of opinion as to the best developer, he thought all developers were good if you only knew how to use them—that was the chief point. Information was given as to various little technical details; for example, how to get moonlight effects, or to print-in clouds. The lecture concluded with a practical demonstration, a lantern slide being exposed and developed by Mr. Wade.

West Surrey.—Usual fortnightly meeting held on the 2nd inst., Mr. J. L. Lyell in the chair. Owing to the inclement weather there were only about thirty members present. The subject of the evening was a paper by Mr. A. R. Dresser entitled "Hints on Hand-Cameras." Mr. Dresser was absent through indisposition, but the paper was kindly read by Mr. George H. James. Mr. Dresser remarked that a wide-angle lens was preferable for hand-camera work, and that the camera should be one with dark slides, and not one of the magazine pattern. In conclusion Mr. Dresser said that he hoped his hearers would not bring discredit upon hand-camera work by "snap-shotting" persons under conditions likely to cause unpleasantness, as many were very apt to do. An exhibition of lantern-slides by Mr. Dresser was then given, some very fine sea studies and his popular "Wild West" series being shown. A short discussion followed, which, owing to the lateness of the hour, could not be finished.

SOCIETIES' FIXTURES.

Nov. 10.—BIRKENHEAD.—Annual Meeting.
" 10.—HULL.—Smoking Concert.
" 10.—PRESTON.—"Transparencies." Mr. J. Macintosh.
" 10.—LONDON AND PROVINCIAL.—"Outdoor Work," Mr. Ernest Milner.
" 10.—HEXHAM.—Lantern Evening.
" 11.—WEST LONDON.—"A Comparison of Printing Processes," Mr. E. J. Wall.
" 11.—P. S. IRELAND.—Discussion on Matters of Photographic Interest. Started by Mr. J. A. C. Lutheon.
" 11.—HOLBORN.—"Carbon Transparencies," Mr. W. E. Debenham.
" 11.—CARDIFF.—Ordinary Meeting.
" 11.—NEWCASTLE-ON-TYNE.—Conversazione.
" 14.—N. MIDDLESEX.—"Photographic Optics," Mr. J. Traill Taylor.
" 14.—RICHMOND—"Notes on the P. S. G. B. Exhibition," Mr. P. Ennis.
" 14.—NEWCASTLE-ON-TYNE.—Eminent Photographers' Slides' Exhibition.
" 14.—GLOUCESTERSHIRE.—"Printing by Artificial Light," Mr. F. H. Burr.
" 15.—WEST LONDON.—Technical Social Meeting.
" 15.—CANTERBURY—Flash-light Work.
" 15.—NEWCASTLE-ON-TYNE.—"Grace Darling and the Farne Islands," illustrated by slides, Mr. J. P. Gibson.
" 15.—N. SURREY.—"Development," Mr. L. Wolff.
" 15.—BLACKHEATH.—"Lantern Slide Development," Mr. J. T. Field.
" 15.—BIRMINGHAM.—Social meeting.
" 16.—LIVERPOOL (Y.M.C.A.)—"A Trip to Rhineland," Mr. H. E. Blain.
" 16.—EASTBOURNE.—"Enlargements," Mr. J. Holloway.
" 16.—THE PHOTO CLUB.—Annual Dinner.
" 16.—EDINBURGH.—Annual Meeting. Discussion: "Gelatino-Chloride Paper."
" 17.—WIGAN.—"The Carbon Process," Mr. J. H. Atherton.
" 17.—LONDON AND PROVINCIAL.—Monthly Lantern Night.
" 18.—P. S. IRELAND.—Smoking Concert.
" 18.—HOLBORN.—"Development," Mr. J. Avery.
" 18.—PRESTON.—AMATEUR PHOTOGRAPHER 1892 Prize Slides.
" 18.—LEWISHAM.—"Hand-Camera Work," Mr. B. Davidson.
" 18.—CARDIFF.—Discussion: "Hand-Cameras."
" 18.—GLASGOW (High School).—Lantern Evening.
" 19.—CANTERBURY.—Competition: Photographic Xmas Cards.
" 19.—HULL.—"The Platinotype Process," Mr. S. G. Buchanan-Wollaston.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5859. **Platinotypes.**—If I print platinotype paper (cold-bath process) too deeply, can I do anything to make the prints lighter, after development and clearing?—MANFIELD.

5860. **Gelatine Lantern Slides.**—Does any firm supply lantern and stereo. slides with gelatine as a foundation, instead of glass; or is there any other substitute for glass, suitable for use in India?—R. H. B.

5861. **Loan of Negatives.**—Can anyone oblige with loan of one or two whole-plate negatives of Irish scenery? All charges will be paid, and value of negatives deposited with Editor if desired.—TREFOIL.

5862. **Metal Plates.**—Will someone tell me if it is possible to re-enamel the metal plates sold by Adams and Co., at home, and if so, how? The other day I was in a hurry and heated the print, which, on being stripped, brought away all the enamel to which it was fixed. An answer will be much appreciated.—J. T. BISCOE.

5863. **Toning Trouble.**—Will someone tell me why my prints on being removed from the toning bath and put into the hypo fixing solution, give forth a most disgusting smell? I am using the Ilford P.O.P. and the gold toning bath. I may say that all do not do the same, but about four out of a batch of ten, say. Has anybody had the same result, and what is the cure?—J. T. BISCOE.

5864. **Platinum Toning.**—Could any reader of the AMATEUR PHOTOGRAPHER tell me whether Ilford P.O.P. can be toned with platinum? If so, what formula?—NEMO.

5865. **Lead Toning.**—Should be glad of a formula for toning bath of lead and gold.—NEMO.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Oct. 28th.—No. 5849.
Nov. 4th.—Nos. 5850, 5851, 5852, 5854, 5856, 5857.

ANSWERS.

5847. **Isochromatic Plates.**—A yellow screen is entirely unnecessary with isochromatic plates when the subject contains a good deal of green or yellow light, but may be used to advantage when taking evening or early morning views, and also for copying subjects with strong contrast of colour. They may be obtained from any agent of Ilford Company, by

whom they are made, and can be fixed to any camera or lens. They are coated with a thick dull emulsion, which renders them free from halation in ordinary landscape and architectural work, but for interiors requiring an hour or so exposure they are better backed. They require about the same exposure as Ilford's and Marion's ordinary plates.—J. H. RHODES.

5853. **Three-Ply Fretwork.**—Messrs. Henry Zilles and Co., of 24 and 26, Wilson Street, Finsbury, E.C., used to keep this about two years ago, and most likely do so still.—M. H.

5855. **Plain Papers.**—Whatman's drawing papers can be obtained from Hudson and Kearns, stationers, 83, Southwark Street, London. I cannot inform you as to Rives' papers.—F. W. WALTER.

5855. **Plain Papers.**—Messrs. Reeves and Sons, of Cheapside, will supply you with Whatman's paper. If they do not keep it in stock they will be able to get it for you.—THE RUBBER.

5858. **Vulcanite Sheets.**—You have very probably kept your prints in standing water for some time, and then allowed them to become almost dry, wetting them a second time before squeegeeing on to vulcanite. Keep them thoroughly wet until ready for squeegeeing, and do this under water.—P.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

R. MACKIE.—The point to which you draw attention was a slip, which has been corrected.

AMATEUR.—Carbon tissue may be obtained from the Autotype Company, 74, New Oxford Street, W.C.

BOTANY BAY.—Probably you are using the lamps without globes. This is wrong. The lamps we use are provided with cheap ground-glass globes, the outsides of which can, if desired, be coated with thin varnish containing auratia dissolved in it, so as to act as yellow screens. You put too much varnish on your negative. Get a pneumatic holder and practice on a few old glasses. Don't warm your negatives. If the varnish sets so quickly, use the square-cut penholder without anything over it to scratch varnish off. The varnish on film may be removed with methylated spirit. The fact of portions of your negatives refusing to blacken in the cyanide may be due either to its not being free from hypo, or to the formation of a particular compound of silver and mercury. It really does not matter if the lights do not blacken right through.

H. J. H.—Your slides are at present on loan; as soon as they come back we will criticise.

W. G. HENDERSON.—The article and illustrations will appear in "Our Lantern Screen," November 25th.

P. W. C.—We can only briefly indicate here the leading operations necessary to make a ferrotype or collodion picture on glass. The chemicals required are collodion, silver bath, developer, intensifier, fixing solution. The collodion may be bought, Mawson's positive collodion being a good brand, though some operators use negative collodion. It may be made from the following formula:—

Ether	2 oz.
Alcohol	2 ,,
Pyroxylin	20 gr.
Iodide of cadmium	10 ,,
Bromide of ammonium	4 ,,

Having coated the glass or ferro plate with collodion, when set immerse in the silver bath—

Silver nitrate	1½ oz.
Distilled water	20 ,,
Potassium iodide	1 gr.
Nitric acid	1-2 drops

After exposure develop with

Distilled water	20 fl. oz.
Iron sulphate	1½ ,,
Barium nitrate	1 ,,
Alcohol	1 ,,
Nitric acid	40 drops.

The developer is poured carefully on the plate so as not to run off. If the image is weak and thin, it may be intensified for ferrotypes by adding a drop or two of tincture of iodine to the fixing bath, which is made by dissolving—

Potassium cyanide	25 gr.
In water	1 oz.

After fixing, wash well and dry, and then varnish with crystal varnish. The above are the outlines of the process, but you will find it worth while to invest the modest sum of ninepence in "The Practical Ferrotyper," by Snowden Ward, to be had from our publishers.

A. H. DUNCAN.—Many thanks for article and prints.

LEWES.—The formula you want is

Paramidophenol hydrochlorate	4 parts
Sodium sulphite	80 ,,
Distilled water	1000 ,,
Carbonate of soda	80 ,,

Dissolve the sulphite in the water, add the paramidophenol, and then the soda.

H. R. LLOYD.—Letter by post.

H. H. B.—The solubility of sodium sulphite in water at 58 deg. F. is 1 in 3½, or practically 1 in 4.

DOZEY, G.—Many thanks for "Doings in Dutchland," which we will use for the "Annual."

F. H. (Cirencester).—The cause of your trouble is not very far to seek. The orange deposit is ferrous oxalate precipitated on the paper, and it points either to (*a*) weak oxalate solution, (*b*) too much iron, (*c*) too much acid in developer, (*d*) not enough acid. Now which was it? The deposit can easily be removed by applying strong oxalate solution acidified with oxalic acid and rubbing gently with cotton wool.

E. L. THOMAS.—Spirituous gelatine mountant, such as Houghton's Excelsior or Wormald's Photopaste, is what you want.

HOELCATET.—Yes, we do not think you will better the india tint plate sunk mounts; they are very suitable both for bromides and platinos. Hannam and Co. (see advertisement pages) will satisfy all your requirements. At present we do not intend to institute any other competitions. Always glad to have your help and assistance, and shall be pleased to welcome your slides.

J. H. M.—Yours is rather a poser, as the idea of what is an ordinary room is different to every one. We would suggest an R.R., working at *f*/5·6, and one of Cadett's very latest high speed plates. It would be even worth while writing to Cadett and Neall, of Ashtead, Surrey, asking them to let you have the very fastest plates they can. Whether anything would be on the plate which would be of any value to a detective or in a court of law is another question altogether. Still, there would be no harm in trying.

DRY.—We write you by post.

E. B. H.—Our method is to develop the landscape, wash well in strong clearing solution, roughly cut out a mask of opaque paper made by mounting deep ruby paper on black waterproof backing paper, and then exposing under a cloud negative. We will have an article on the subject this month. Always glad to return prints when stamps enclosed.

A NOVICE.—We write you by post.

H. M. S.—Your idea of enlarging is quite feasible, and you will find it recommended in the earlier issues of this year, in a series of articles, "Notes on Enlarging."

W. R. P.—(1) It is possible to get all detail in a setting sun picture. Use isochromatic plates, medium rapidity, with a shutter working about ⅛-10th of a sec. In developing use very little pyro, so as to keep negative thin. (2) The reason of a silver print not being sharp in some places is due to the want of absolute contact between the paper and negative. The remedy is to place sheets of clean blotting paper between paper and printing-frame back, and thus ensure absolute contact. (3) The yellow screen must be used with a good deal of discrimination. It is usually unnecessary in the morning and evening, when the light is yellow. The main idea of the yellow screen is to cut down the action of the blue rays, and it should therefore be used when copying objects with a lot of blue in. It is useful with landscape work when the distance is hazy, and in the height of summer.

WINTERSETT.—No, there is no difference between a landscape and a view lens. Of the lenses you name B is the more suitable.

T. ARNOLD.—It requires a good lamp to give a brilliant 5 ft. disc. Send us a slide or two up.

ANTI.—A lens ought to be able to cover the plate sharply when the centre is in focus. Focus for about one inch from the centre. You will then split the difference.

ILEX.—The metabisulphite being an acid salt, will on keeping evolve a considerable quantity of free acid, and unless this is neutralised by the addition of more alkali it will prolong development very much. The action of the metabisulphite is to keep the developer, the plate, and the hands clean, and it does this also, some say at the expense of the shadows, keeping them too clean also.

AMBROSE.—(1) Over-printed, too much foreground, not enough over chimney. (2) Under-printed and over-toned. (3) At least an inch less foreground, wants clouds. We cannot understand how you work to get such curious results. Can you call on us and bring some negatives with you?

F. M.—(1) Flat, and wanting in brilliancy. (2) Camera not straight, over-printed, flat and poor. (3) Over-printed, flat, and wanting in brilliancy. These three prints strike us as having been printed in the sun, there are no pure whites in the prints, probably due to the weak gold bath. (4) Decidedly better, though still flat. (5) Water too white, and the sky wants clouds badly. (6) The best of the lot, a very fair print. No. 3 could be made something off with judicious printing and a suitable surface. We should like to see some more work. You are rather inclined to attempt too much; little hits pay better in results than panoramic sweeps.

YARDLEY.—Let your friend make his windows dirty, or allow them to get so, and then photograph them; you will get no reflections then.

TYNEMOUTH.—We presume that all your prints are untoned, if not the sooner you abandon that hot tone the better. (1) The cathedral is falling over, in consequence of camera not being held straight. (2) Good, both these are eligible as river scenery. (3) The white spots, we should say, were caused by unequal drying of the plate. (4) Far too white in the water and sky; with a good cloud, and the water toned down, and a rough paper, this would be good. (5) Yes, like too many sunsets, the blackness of the trees is awful, such as you never saw even at midnight, do a little bit of dodging here, and you will get a good result. (6) Too flat, and plate too crowded. (7) Suffers from flare spot, too much foreground, too much bank sky. (8) Nothing artistic in this. (9) Ah! here's a chance for you to make a real picture by using the knife well and printing in clouds. Just see if you cannot improve on it, and if not, send us up a print, and we will show you how.

F. P. PEMBERTON.—(1) Wants clouds, and might be developed a little longer. (2) Over-exposed, flat, and foggy. No. 3 Missing. (4) Over-printed and too harsh. (5) Ditto. (6) Too much uninteresting foreground. (7) An inch less foreground, too deeply printed.

MRS. E. A. CLEASBY.—We will develop films, and then write you.

F. C. HERDEL.—The Ubique is fitted with an R.R. of 5⅛ in. equivalent focus, with stops of *f*/8, *f*/12, *f*/16, *f*/24, *f*/32, *f*/48, and *f*/64. The blind-shutter we are not quite sure about, but we estimate it at 1-60th sec. If you require greater speed it can be easily obtained by increasing the tension on the spring, and this the makers would do for you at once. The comparative speeds of the two plates you name are extra rapid 80, lightning 127½.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** (*A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.*)

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

Burnisher.—Half-plate burnisher, very little used What offers?—T. N. L., 8, Hardwick Terrace, Stockton-on-Tees.

Cameras, etc.—Pearson and Denham's reducing camera, from half-plate to lantern slide, price 20s.—B., 44, Wood Street, Leek.

Gas Bag.—Gas bag, extra good, pressure boards, retort, purifiers, sell cheap, bargain.—Alston, 211, Ladypool Road, Birmingham.

Hand-Cameras, etc. — Quarter-plate Rouch's Enreka hand-camera, adjustable shutter, detached plate chamber, focussing screen, £4 10s.—G., 61, Waldegrave Road, Brighton.

Facile, superb R.R. lens, latest pattern, new, £3 15s., cost £5 5s.; also Talmer quarter-plate, splendid R.R. lens, new, £3, cost £4 12s. 6d.; solid leather Facile case, 17s. 6d., cost 25s.—No. 351, office of this paper, 1, Creed Lane, E.C.

Lanterns, etc.—I will exchange my high-class mahogany-bodied single lantern (originally cost £15) for a first-class half-plate camera and lens, with extra long-extension hellows body and usual accessories.—Tweedie, 54, Hawley Square, Margate.

Magic lantern with Newton's 3-wick lamp, several slides, cheap, or exchange hand-camera.—Copeman, Henstridge.

Pair old-pattern lanterns, 3¼ in. condensers, recently fitted with 3-wick mineral oil lamp, complete in box with dissolving fan, 25s.; also Phœnix pneumatic shutter, 7s. 6d.; and burnisher, 3s. 6d.—W. Gibbard Junr., 48, Cambridge Road, Barking.

Lenses, etc.—No. 4D Dallmeyer lens, perfect with diffusion arrangement, price £10; will take a part payment Swift's single landscape full-plate lens—David Boyd, Kilmaurs.

Cabinet portrait lens, Marion's, London, best quality, plated, cost £9, take £5.—Pyke, Rainham, Kent.

7 by 5 wide-angle rectilinear lens, rotating diaphragms, new, 26s.—Brewster, Chemist, Kingston-on-Thames.

Negatives.—English, Irish, and Scotch quarter-plate negatives for sale, 1s. each.—Hughes, 42, Upper Baker Street, London.

Sets.—Camera, 7½ by 5, with stand, 8 by 5 Morley's rectilinear lens, three double backs, price £10; maker, Sharp and Hitchmough, Liverpool; deposit.—T. W. Bateman, office of this paper, 1, Creed Lane, Ludgate Hill, London.

Full-plate Lancaster camera (Merveilleux), with stand, three double dark slides (two with carriers), new instantaneous shutter, four printing frames, three developing dishes, one dozen Ilford full plates, waterproof cases for camera and stand, original cost over £8, will take £4 5s.; camera, etc., may be seen at office of this paper.—No. 330, office of this paper, 1, Creed Lane, E.C.

Giving up photography. £5 will purchase complete outfit, or open to offers separately, comprising amongst others, one Ross' 5 by 4 portable symmetrical lens, cost 70s.; 5 by 4 Lane's improved camera, reversing back, fitted Fallowfield's rapid rectilinear, and

three double backs and tripod for same; Lancaster's camera for enlarging quarter to 8½ by 6½, with lens, complete; quarter and 5 by 4 storing boxes and landscape negatives; quarter Lancaster Meniscus lens; Wood's washer and adjustable rack; dark-room lamp, scales with glass pans and weights from ½ gr. to 2 oz., cost 25s.; focussing glasses, measures, chemicals, mounts, photographic annuals; well worth double; a bargain to anyone. Can be seen by appointment, but owing to its bulk cannot be sent on approval.—F. Young, 19, Lambourn Road, Clapham.

Shutter.—Shutter, Thornton-Pickard time and instantaneous, 1½ in., 14s.—W. 164, Euston Road, N.W.

Stereoscopic Apparatus.—Two 4 in. Ross' P.S. lenses with iris diaphragm, paired for stereo work, £5 5s. the pair; two 6 in. do. do., £8 6s.; two 4½ in. Dallmeyer's 2A stereo landscape do., £2 15s.; Thornton-Pickard foreground stereo shutter, 20s; solid leather case for lenses and shutter, 6s.—Francke, St. Saviour's Road, Jersey.

Sundries.—Violin, beautiful harmonious tone, in fine preservation, suit lady or professional, very handsome model, excellent silver-mounted bow and first-class baize-lined lock-up case, accept 16s. 6d. the lot, bargain; 20s. worth of good music given in gratis; absolutely certain to give satisfaction; approval willingly; references given if required.—Mrs. Graham, College Buildings, Ipswich.

For sale, first 13 vols. of AMATEUR PHOTOGRAPHER, ten bound, also first ten holiday numbers, the lot £3. —C. P., 24, Hazlitt Road, West Kensington.

Vols. 1 to 9 AMATEUR PHOTOGRAPHER, handsomely bound, perfectly new, also several special numbers. What offers?—R. D., 30, Maresfield Gardens, London, N.W.

WANTED.

Cameras, etc.—Give good exchange for worn-out 5 by 10 or 10 by 12 camera with slide.—Mills, 9, Clarendon Villas Road, Aldrington, Sussex.

Hand-Cameras, etc.—Wanted, good hand camera for cash or useful exchange; send print taken with camera.—Readhead, Flambro', Yorks.

Lanternescope.—Wanted, good hand lanternescope; approval; good exchange.—Allen, Pyrmont, Barber Road, Sheffield.

Stereoscopic Apparatus.—Stereoscopic camera and slides, 6½ by 3½ preferred, with or without lenses. —3, Walpole Street, Wolverhampton.

Special Notice.—Stanley Show. Stand No. 3 (Photographic Section), Agricultural Hall, from Nov. 18th to 26th. To weekly readers of the four following advertisements, and to all whom it may concern. We intend to have the *brightest*, *biggest*, and *best* show in the exhibition. If you wish to see all the best things in the market, and everything up to date, don't fail to visit our stalls, which cover over 100 feet. City Sale and Exchange, 54, Lime Street, Leadenhall Street, City (late Goy's Medium).

Lanterns! Lanterns!! Lanterns!!! Slides! Slides!! Slides!!! The largest and most varied selection in the whole kingdom. Before selecting elsewhere, call and inspect the stock of the City Sale and Exchange, 54, Lime Street, Leadenhall Street, City, where we have no hesitation in saying you will find all that you require in this way. Lanterns for sale, lanterns lent on hire, lanterns sold on commission, or taken in exchange for other apparatus. Write for special supplemental lists, Manager, City Sale and Exchange, as above.

Bargains in Lenses.—Wray's 10 by 8 narrow angle landscape lenses, 15 in., grand definition, iris stops, as new, £2 17s. 6d.; 9 by 7 Laverne wide-angle rectilinear rotating, stops, grand definition, as new, 30s.; 9 by 7 Optimus rapid euryscope lens, grand definition, Waterhouse stops, as new, £5 5s.; Ross half-plate rapid symmetrical, as new, Waterhouse stops, £3 17s. 6d.; whole-plate rapid rectilinear by Charterhouse Stores, Waterhouse stops, best condition, 35s.; 5 by 4 rapid rectilinear lens, by Hancock, iris stops, fine definition, 22s. 6d.; Swift 5 by 4 wide-angle rectilinear, 5 in focus, rotating stops, 32s. 6d.; Dallmeyer portrait lens, c.d.v., grand definition, Waterhouse stops, finest order, 63s.; 7 by 5 Optimus rapid rectilinear, Waterhouse stops, as new, 42s. lowest; Quarter-plate hand-camera lens, by Laverne, rapid rectilinear, adjustable focus 15s., quite new. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Don't fail to visit Stand No. 3, Arcade Gallery, Agricultural Hall, November 18th to 26th, Stanley Show (Photographic Section).

Bargains in Hand Cameras.—Crouch "Dresser" hand-camera, fitted Crouch euryscope lens, time and instantaneous shutter, rising and cross fronts, rack focussing, two finders, three double slides, covered morocco, £6 15s.; Rouch hand-camera, quarter-plate rapid rectilinear lens, roller behind shutter, bag changing, as new, £3 17s. 6d.; Fallowfield's Facile landscape lens, shutter, finder, etc., carries twelve quarter-plates, 50s.; Luzo hand-camera, by Robinson, rapid rectilinear lens, time and instantaneous shutters, carries 100 films, size ¼ in. leather case, as new, £4 12s.; Chadwick's hand-camera (practical), rectilinear lens, rotating stops, roller blind, shutter, rack focussing, twelve Barnett's patent slides in leather case, as new, £4 4s.; Shew's 5 by 4 Universal hand-camera (folding), leather bellows, adjustable focus, fitted Swift's rapid paragon lens, Waterhouse stops, Thornton-Pickard shutter, three double slides, covered morocco, as new, £6 7s. 6d.; Blair's 5 by 4 hand-camera, good lens, time and instantaneous shutter, two finders, rack focussing, three double dark-slides, as new, £3 3s.; Optimus Unique hand-camera, fitted Optimus R.R. lens, instantaneous shutter, three double slides, finder, adjustable focussing, £2 17s. 6d.; Kodak No. 1, best R.R. lens, carries 100 films, best order, in leather case, 40s.; McKellen's hand-camera, R.R. lens, shutter, carries 12 quarter-plates, covered leather, as new, 35s.; Fallowfield's Facils, fitted rapid rectilinear lens, carries twelve quarter-plates, as new, £3 17s. 6d. All above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second hand apparatus bought, sold, or taken in exchange. Inspection invited.

Don't forget to visit the City Sale and Exchange Stand, No. 3, Agricultural Hall, November 18th to 26th (Stanley Show).

Bargains in Cameras and Sets.—Whole-plate outfit, by Parker, Holborn, including camera, finest Spanish mahogany, back and front extension, best leather bellows, all latest improvements, three triple folding double book slides, rapid rectilinear lens by Parker, Waterhouse stops, four-fold ash tripod, a grand lot, brand new, the whole fitting into solid leather case, take £12 12s., cost over £20, warranted in every detail; Whole-plate Rouch patent camera, double extension, reversing back, etc., three double dark-slides, all brass bound, made for the tropics, fitted Wray's 10 by 8 narrow-angle lens, iris stops, and solid leather case, grand lot, £7 7s.; Lancaster's half-plate 1886 improved special, back extension, leather bellows, two double slides, all brass bound, rapid rectilinear lens, Waterhouse stops, focusser, three-fold bayonet joint tripod, the set in very finest order, £5 17s. 6d. lowest; Optimus half-plate Rayment camera, reversing back, and all best movements, fitted rapid rectilinear lens, iris stops, three double slides, and three-fold stand, grand set, as new, £7 5s.; half-plate camera, by Houghton, all latest movements, grand article, fitted three double slides, rapid rectilinear lens and double folding stand, £6 10s.; quarter-plate Lancaster's Merveilleux set complete, 15s.; Lancaster's quarter-plate Instantograph, finest order, all latest improvements, including camera, lens, iris stops, two double slides, stand and case, 37s. 6d.; 5 by 4 best quality camera, by Robinson, Regent Street, leather bellows, rising, falling, and cross front, wide-angle movement, three double slides, fine rapid rectilinear lens, by Robinson; Newman's shutter and Eastman's ½-plate roll holder, quite new, £5 17s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Don't fail to visit Stand No. 3, City Sale and Exchange, who will have the brightest, biggest, and best show at the Agricultural Hall, November 18th to 26th.

Magic Lanterns and Slides. — Walter Tyler's Helioscopic is perfection of all lanterns, supplied to Indian Government, School Boards, science classes, clergy, and exhibitors throughout the world. Impossible to have lanterns give better definition or more satisfactory results; specially constructed lens, which no other lantern possesses.—Walter Tyler, 48, Waterloo Road, London.

Walter Tyler's Best Triples and Biunials are unsurpassed, and perfect in every detail. Good biunials, mahogany bodied, brass fronts, and all improvements, £7 10s.; single lantern, with 4 in. condensers, portrait front lens, 4-wick lamp, complete, in case, 27s. 6d.—Walter Tyler, 48, Waterloo Road, London.

Lantern Lenses.—Specially constructed. Walter Tyler's new Helioscopic portrait combination lantern lens gives the most perfect definition and brilliancy, can be fitted to any lantern, and for excellence cannot be surpassed. No other maker has this lens, which is manufactured expressly for Walter Tyler, Waterloo Road, London.

Regulators and Gauges.—Great reduction, in price. Either can now be had of Walter Tyler for 14s. each. The largest stock of gas cylinders in England. Best seamless steel, tested and valved, and all sizes at very low prices.

Slides from Negatives and Pictures —Walter Tyler manufactures and colours slides on the premises, thus ensuring speedy delivery, and prices are most moderate.—Walter Tyler, 48, Waterloo Road, London.

Biunial Lanterns.—If you are in want of a really good biunial lantern, perfect in every respect, call and see Walter Tyler's entire brass fronted, mahogany-bodied, lined with Russian iron, and fitted with new best quality lenses, and sold at a most moderate price. The top lantern will take a 4-wick lamp. These are great bargains.—Walter Tyler, 48, Waterloo Road, London.

Hire Department is now perfect. Largest and best collection of slides in the world; over 200,000 always in stock. Temperance, travels, Scripture, educational, comic, tales, etc. Cheaper than any other house, no extra charge for coloured slides or effects. Special terms for large quantities.—Walter Tyler, 48, Waterloo Road, London

Lanterns and Slides.—If you wish to hire, purchase, or exchange, you cannot possibly do better than go to Walter Tyler, who makes this business a specialite, and you will thus save dealer's and all intermediate profits.—Walter Tyler, 48, Waterloo Road, London.

Second-hand Lanterns and Slides at very moderate prices, also all kinds of apparatus. Send for large catalogue, 420 pages, with instructions for working lanterns of all kinds, and costing an immense sum to produce, sent free for 6 stamps. Small catalogue and second-hand list, post free.—Walter Tyler, 48, Waterloo Road, London.

Bijou Enlarging Lanterns.—Finest results with Hughes's patent rectangular condensers, half the size of ordinary make, superior definition, proper diffusion of light; several whole and half-plate for sale, cheap.

The Marvellous Pamphengos. — Finest oil-lighted lantern, equals limelight, stood the test of over fourteen years against all imitations, elegant brass fronts, best lenses, from £2 10s. each.

Magic Lanterns, Magic Lanterns.—Largest assortment in the world, cheapest and best, nicely japanned body, 4 in. double condensers, portrait front lenses, rack and pinion, four-wick lamp, in case, £1 7s. 6d.

The Docwra Triple Prize Medal, highest award, supplied to Dr. H. Gurney, Madame Patti, and the Royal Polytechnic.

The Malden Triple; supplied to B. J. Malden, Esq.

Fine Triple Lantern; four set of large diameter lenses, £32, cost £60.

Special Triple; mahogany, brass fronts, £12 12s.

Elegant Mahogany Biunial; brass fronts, £7 10s.; blow-through safety jets, 11s.; mix gas jet, 15s. 6d.; Malden double dissolving tap, 15s. 6d.; a number of grand effects; particulars free before purchasing. Send for Mr. Hughes's grandly illustrated catalogue, over 180 fine wood engravings, price 6d.; postage 3d.; separate list of 60,000 slides, price 6d.; postage 3d.; pamphlets free; second-hand lists of bargains.—W. C. HUGHES, Brewster House, Mortimer Road, Kingsland, London, N.

ENLARGING APPARATUS.—Hume's enlarging apparatus, 5 in. condenser, without objective, 61s.6d.; with 8 in. condenser, 122s. 6d., carriage paid. —Hume, 1, West College Street, Edinburgh.

IMPORTANT TO AMATEURS.—Negatives skilfully Retouched. Printed in silver, gelatino-chloride, etc., and Enlarged. Also Developing, Copying, etc.—Terms strictly moderate.—Address, Wilfred Emery, 24, South Street, Baker Street, W.

CHRISTMAS CARD MOUNTS, gold blocked mottos, fancy bevelled edges, various samples; 1s. and 2s. post free.—Hooper and Co., mount manufacturers, 5, Hand Court, Holborn, London. Price list of all kinds of mounts post free.

HAS any Photographer an Opening for a lady (24) anxious to learn Printing, Enlarging, or Lantern-slide Making? Could give whole or part time. Would be pleased to reside with photographer's family as paying guest with above end in view.—Aspirant, office of this paper, 1, Creed Lane, E.C.

JOHN DONE & CO.,

Photographic Printers,

Have the most complete Works for Silver Printing in the Country, and give special attention to Amateurs.

ENLARGEMENTS ON PAPER AND OPAL.

LEWISHAM HOUSE WORKS,

WOODVILLE RD., NEW BARNET (nr. LONDON).

Price Lists free on application.

PHOTOGRAPHIC, SCIENTIFIC, AND MISCELLANEOUS PROPERTY.—MR. J. C. STEVENS' SALES BY AUCTION of Miscellaneous Property of every description take place nearly every FRIDAY. Lists for Catalogues should be sent at least a week before the sale.—38, King Street, Covent Garden, London, W.C.

NEW!!

EDWARDS'S PROTECTIVE VARNISH

FOR FILM NEGATIVES.

INSTRUCTIONS.—Pour the Varnish into a flat dish, soak the Film Negatives in it for two or three minutes, and hang them up to dry.

PREVENTS CURLING AND AFFORDS PERFECT PROTECTION.

Equally Useful for Negatives on Glass.

Eight-ounce Bottles, **1s.** Pints, **2s.** Post, 3d. and 6d. extra. Of all Dealers, or

B. J. EDWARDS & CO., HACKNEY, LONDON.

DALLMEYER'S LENSES

Are USED by all the LEADING PHOTOGRAPHERS, both AMATEUR and PROFESSIONAL, THROUGHOUT THE WORLD.

Have obtained the HIGHEST AWARDS wherever Exhibited.

COMPOUND TELE-PHOTOGRAPHIC LENSES

(Protected December, 1891.)

Patent Stereographic Lens, with No. 1 Negative attachment (mounted in aluminium) **£10 0 0**
18 Patent Portrait Lens, with No. 2 Negative attachment (mounted in aluminium) **15 0 0**
28 Patent Portrait Lens, with No. 3 Negative attachment (mounted in aluminium) **22 10 0**

Particulars of Negative Elements.—Price, Mounted in Aluminium, No. 1. **£5**; No. 2, **£6 10s.**; No. 3, **£9.** Mounted in Brass, No. 1, **£3 15s.**; No. 2, **£4 10s.**; No. 3, **£6 10s.**

DALLMEYER *"ON THE CHOICE AND USE OF PHOTOGRAPHIC LENSES,"* *Price 1s.*

Descriptive Catalogue of Photographic Lenses, Cameras, Telescopes, Microscopes, etc., will be posted free on application.

J. H. DALLMEYER, Limited, Opticians, 25, NEWMAN STREET, LONDON, W.

Telegraphic and Cable Address—"DALLMEYER, LONDON"

THE STANLEY PHOTOGRAPHIC EXHIBITION AND COMPETITION,

In connection with the 16th Annual

STANLEY SHOW

OF

BICYCLES, TRICYCLES, MACHINERY, AND ACCESSORIES.

WILL BE HELD AT THE

ROYAL AGRICULTURAL HALL, ISLINGTON, N.,

NOVEMBER 18th to 26th inclusive.

Novelties and Specialities in Apparatus will be shown by all the leading Photographic Firms, and the Competition Pictures exhibited in the

ARCADE GALLERY.

The Show will be opened at noon on Friday the 18th, by

Sir ALBERT KAYE ROLLIT, LL.D., M.P.

Winter Meeting of the Society of Cyclists addressed by

Dr. B. W. RICHARDSON.

Lantern Entertainments, Bohemian Concerts, Grand Assault at Arms. Boxing Competition, Trick Riding, etc., etc.

Open each day 11 a.m. till 10 p.m.

A number of cheap Excursions have been arranged by the Railway Companies from all parts of the Kingdom.

Further particulars of J. DRING, *Secretary*, 57, Chancery Lane, W.C.

PRINT COLOURING COMPETITION!



£10

In Prizes.

No. 1 Box, with 12 Colours, **10/0.**
No. 2 Box, with 24 Colours, **18/0.**

BRUN'S GLOSSY TRANSPARENT COLOURS.

Particulars to be obtained from every Dealer.

SOLE WHOLESALE AGENTS:

ARTHUR SCHWARZ & CO., Dashwood House, 9, New Broad St., E.C.

SCIENCE SIFTINGS

Has the Largest Circulation of any Scientific Paper in the World.

56, *COLEMAN STREET, LONDON, E.C.*
28th January, 1892.

We have carefully examined the books of "Science Siftings" for the past three months, and find that the circulation during that period has **steadily increased.** *Commencing with an issue of* 11,247 *Copies of No.* 1, *of October 24th*, 1891, *it has attained with No.* 14, *of January 23rd*, 1892, *a* **weekly total of 20,387 Copies.**

EMDIN & TOD, *Chartered Accountants.*

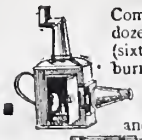
SCIENCE SIFTINGS. ONE PENNY WEEKLY. Of all Newsagents.

Send Halfpenny Stamp for Specimen Copy.

Head Offices: 78, FLEET STREET, LONDON, E.C.



JOHN PIGGOTT,
MAGIC LANTERNS AND SLIDES.



Complete with one dozen Comic Slides (sixty pictures), burns Paraffin Oil, **2/11.** Postage and Packing 9d.

COMIC SLIPPING SLIDES.

Best quality, Hand Painted.
Each **1/-** Postage 6d.
Per dozen ... **11/6** Packing Box 4d.

THE No. 1 BIJOU SET.



Comprises a Magic Lantern with Condenser and front Lens. Paraffin Lamp, Silvered Reflector, Sixty Comic Figures on Twelve Long Slides, Three Complete Nursery Tales, each tale having twelve pictures on four slides, making thirty-six more pictures. Two Comic Slipping Slides, Two Moving Lever Slides, Two Moving Panorama Slides, Good Night, Welcome, Curtain, Queen, Rackwork Slide, Two Chinese Firework Slides, making 109 pictures in all, giving a picture three feet in diameter.
Price **7/6**. Postage and Packing 1/-

No. 2 Set, same as above, but having a larger Lantern, and giving a picture four feet in diameter, **12/6**.

Packing Box 6d.



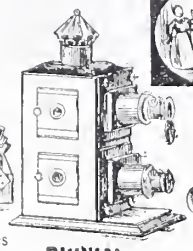
LITHOGRAPHIC LANTERN SLIDES.

Full Size and suitable for Lanterns with not less than 3 in. Condensers.
12 Slides to each Set (size 3¼ in. by 3¼ in.).
Price **4/-** Postage 6d.



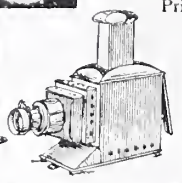
SLIDING CARRIER BLOCK.

For instantaneously changing slides when using a single Lantern.
Each **1/4.** Postage 3d.



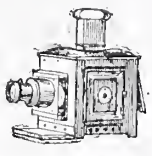
BIUNIAL LANTERN.

With Mahogany Body, 4 in. Condensers, Achromatic Objectives, with Rack and Pinion Adjustment, and Adjusting Screws, **£4 19/-**.



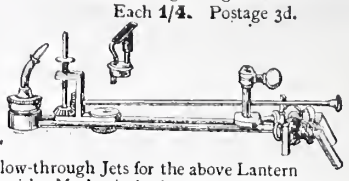
MAGIC LANTERN.

With 3-wick Refulgent Lamp, 4 in. Condenser, and Achromatic Front Objective, with Rack and Pinion Adjustment (which is also useful for taking ¼-plate portraits). Complete in box, **26/6**.



MAHOGANY BODY LANTERN.

With 4-wick Lamp, 4 in. Condenser, Archromatic Front Objective, with Rack and Pinion Adjustment, complete in box, **48/-**



Blow-through Jets for the above Lantern with Mechanical Arrangement for turning the Lime Cylinder, each **8/6** & **10/6**
Oxygen-Hydrogen Jets, with Platinum pointed Tip, Interchangeable ... each **18/9**
Gas Bags, best quality Twill, approximate capacity 8 cubic feet... **53/-**
Tubing per foot **-/3**
Retort for Oxygen **10/6**
Purifier Tubes to fit any wine bottle ... **3/9**
Soft Limes per box (12) **1/2**
Hard „ „ „ **1/9**

All Parcels of 10s. value Carriage Paid to any part of England, Ireland, Scotland and Wales.

Please send for Complete Price List of Magic Lanterns and Photographic Accessories.

117, CHEAPSIDE, & MILK ST., LONDON.

NOW READY. **The Practical Photographer's LABEL BOOK.**

With Antidote for each Poisonous Chemical clearly printed on the Label.

Labels Varnished, rendering them Practically Impervious.

The perforating is such that any Label can be removed without disturbing any of the others.

THE MOST UNIQUE LABEL BOOK EVER PUBLISHED. **6d., post-free, 7d. Of all Dealers.**

"A distinct advance upon what has been done before in this direction."—*The Photographic News.*
"This is certainly the best label book which has yet been issued."—*The Amateur Photographer.*

PERCY LUND & CO., Bradford and London.

Now Ready. 80 pages. Demy 4to. Price 3s. 6d.

SUN PICTURES
FROM MANY LANDS.

Containing Illustrated accounts of HOLIDAY TOURS.

With Two Frontispieces in Woodbury Gravure.

THIRTY-SIX TINTED COLLOTYPES

A NOVELTY IN ILLUSTRATED ART PUBLICATIONS.

London: HAZELL, WATSON, & VINEY, Ld., 1, Creed Lane

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 424. Vol. XVI.] FRIDAY, NOVEMBER 18, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

Our Views.—Zeiss' New Lenses—Our Views on the Medal Question—No Personalities—English Art at Chicago—Hackney Exhibition—Something Nebulous—The Leytonstone Camera Club Exhibition—The Unmitigated Photographer—Amateur *v.* Professional—Catholic Lantern Slides—Dresser on Lenses—Richmond Camera Club Discussion—Preparing for Exhibitions—Photographers and their Art—Mr. Maskell at Brussels—The Paget Company's Novelties—Photographs of the Year—A Mistake—Our Competition.

Leaders.—New Cold-bath Platinotype—Notes on Colour.

Letters to the Editor.—Gelatino-Chloride Paper (Gotz)—Mason's Toning Bath (Nash)—Enamelling Silver Prints (Thermo)—Early Photographs (London)—The Leytonstone Exhibition (Bailey)—Winter Photography (Self-Help)—Photographs of the Year (Knight)—Lantern Slide Printing Frame (Ashford)—Curious Old Customs (Ellis)—Chloride Paper (Underwood).

Apparatus.—Imperial Plates—Blackwood's Varioscopic Lens—Smith's Washer—The Lecturer Candle Lamp—Alston's Syphon.

Articles.—How to Make a Set of Apparatus (H. J.)

Reviews.—Lumière, Couleur et Photographie (Calmette)—Photomicrography (Bousfield)—The *Gentlewoman* Christmas Number—The *Young Gentlewoman.*

Societies' Notes.

Socities' Meetings.—Accrington—Ashton—Belfast (Y.M.C.A.)—Blackburn—Bolton—Bristol—Burslem—Cornish—Darlington—Durham—E. London—Edinburgh—Fairfield—Glasgow—Hackney—Halifax—Kendal—Leeds—Leicester—Leigh—Liverpool (A.P.A.)—Leytonstone—Louth—Liverpool—Manchester—N. Middlesex—Putney—Stockport—Stockton—S. London—Todmorden—W. London—York.

Exhibitions.—Leytonstone—Edinburgh—Hackney.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom	Six Months, 5s. 6d.	Twelve Months,	10s. 10d.
Postal Union	" " 6s. 6d.	" "	13s. 0d.
Out of Postal Union	" " 7s. 9d.	" "	15s. 3d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 42.—"Sea Pieces and River Soenery." Latest day, November 21st.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, December 9th.)

The well-known optician, Zeiss, has now completed the series of his lenses, with the introduction of Series I., II., and III*a*. Series I. is an anastigmat with front combination of two lenses and rear combination of three lenses, and works at an aperture of *f*/4·5. The second series is also a doublet of five lenses, working at *f*/6·3, and Series III*a* is a doublet working at *f*/9. We hope to be able to give a little more information about them next week.

To judge from the three letters in our correspondence columns of last week, "Our Views" in a previous issue of the medal question have been a little misunderstood, and we are sorry Mr. Charles Tylee should have imagined that our remarks on "medal hunters" were intended to apply to him or such as he.

Personally we were very pleased with Mr. Tylee's works at the East London Photographic Society, and congratulate him upon the success with which he met there, but the number of awards which worthily fell to his share suggested our remarks as to the "limitation of medals that can go to one man," and gave us opportunity of pointing out the danger that *might* arise. Mr. M. A. Wilkinson, Hon. Secretary E. L. P. S., has now told us that his society's rules are so framed as to meet such a contingency, and we are very glad to know that such is the case. What we have said about the "medal hunter" we have said deliberately, and have no desire to unsay it. We are not to blame if those appropriate it for whom it is not intended.

We understand that a collection of photographs representing the best artistic work of this country will find its way to the great exhibition at Chicago. The difficulties of transit and the prices charged for space would doubtless in the ordinary way debar our amateur exhibitors at least from contributing to the photographic section, hence it is well to know that some arrangements are contemplated whereby the New World and all the hosts who will visit the World's Fair will have an opportunity of seeing examples of photographic work of the "modernist" character. We believe this collection is being formed by a limited number of special invitations to known photographers, and is in the hands of a substantial committee representative of the Royal Commission for the Chicago Exhibition.

We go to press too early to notice fully the doings of photographers at the Hackney Exhibition, but things were

well in hand on Monday morning when Mr. Fenton Jones, the indefatigable Hon. Secretary, looked, together with his committee, quite equal to the Herculean task of hanging and arranging—work which had commenced long before many of our readers had opened their eyes to the tardy light of the November morning.

By about eleven o'clock Mr. W. E. Debenham arrived in accordance with his promise to give the Hanging Committee the benefit of his advice as to the placing of pictures with regard to respective merit. So those of our readers who are pleased at the position accorded to their pictures will know to whose good judgment they are indebted, and, on the other hand, exhibitors who find themselves "skied" but who think they are entitled to places "on the line" will doubtless suppress any demur, knowing that the matter has been in the hands of one so well known and so capable. We should think that "Hanging Committee" must be



IRISH BEAUTIES.

Taken by Mr. F. W. Hindley, in the Mimll Hand-Camera.

very thankful to have such responsibility removed from their shoulders.

To-night (Thursday) Capt. W. de W. Abney will distribute the medals, on which occasion, it is whispered, the energetic services of Mr. Fenton Jones will receive graceful acknowledgment from the admiring and appreciative members of the society.

NORTH, south, east, and west, town and country, are interested in it. Professional, trader, amateur, journalist, —all are to be included in it. No photographic interest will be omitted. Polypus, like its many arms, will embrace every section, and when duly organised it will be a matter of perhaps national importance. What is it? Well, we are not, perhaps, at liberty to divulge particulars as yet. It is not exactly new, but having existed in a sort of nebulous state for some time a process of concentration has commenced, and we shall shortly be able to announce the birth of a new body in photographic space

SOMETHING to do with the Camera Club Exhibition and its promoters? Oh dear, no—nothing whatever. We may know something of that too, but sometimes "silence is golden."

THE Leytonstone Camera Club has every reason for congratulation on the success of its efforts. The attendance on each day far exceeded expectation, and on the last evening (Saturday) the hall was crowded to excess. On that evening the medals were distributed to the respective winners by Mrs. Pickett Turner, assisted by Dr. Pickett Turner, the President of the club. Mr. Horsley Hinton (Vice-President), in proposing the vote of thanks to Mrs. Pickett Turner, alluded briefly to the increased use of rough-surfaced papers, as was instanced by the present exhibition, but pointed out that the blind use of such papers or any similar methods, simply because others had obtained artistic results thereby, was an entirely wrong course of action. He was himself in favour of all surfaces and all methods being used according to the requirements of each subject, and he hoped that as he was newly connected with the club it would not be supposed that he only had sympathy for one class of work.

"THE unmitigated photographer" is a useful addition to modern photographic nomenclature. Many thanks, Mr. "G. D.," for its suggestion. The term will not require definition; we all know what is meant. There's an advantage in concise descriptive names, and we are still waiting for something equally descriptive of the other section—the unmitigated something else! Modernists, artistics, fuzzyists, none of them will do. Will someone suggest?

QUITE right, good *Photography*, "wonders will never cease," and, with all possible diffidence, we venture to suggest that they don't *all* originate in the *Midlands*. We do not for a moment begrudge our contemporary his due credit for having been useful in the "Amateur *versus* Professional" question. We would give our Coventry friend his due, but remind him at the same time that a certain description of praise is no great recommendation.

THE REV. G. WRIGGLESWORTH, of St. Mary's Rectory, King's Lynn, desires to make known to his brother priests that having made a series of ninety odd lantern slides illustrating the Roman Catacombs, he is willing to lend them gratuitously to such as may desire to lecture on the subject, "for the advancement of Catholic truth," during the present season.

MR. A. R. DRESSER is evidently not in harmony with modern ideas as to the desirability of using long-focus lenses on hand-cameras as well as on other kinds of instruments. He recommended his hearers at the West Surrey Society to use a wide-angle lens for the hand camera.

RECENTLY at Richmond a useful discussion was opened on the subject of mounting and framing photographs for exhibitions, and in one case it was suggested that "size and shape" would influence a picture's chance of being hung. Not to harp too much on the same chord, we have evidence this year that size—what was it again, 7 ft. by 5 ft.?—does not debar a picture sometimes, and we never heard of shape preventing either. So long as it was not circular or elliptical, we should suppose shape mattered little.

The subject of preparation of work for exhibition reminds us of another aspect of the case. We often hear possible exhibitors conning over the names of the judges, and as we know in some cases deliberately selecting such subjects and printing methods as they suppose will specially appeal to the tastes of the particular judges. Why, it's a worse form of "medal hunting" than the "unmitigated pot-hunter," and is certainly playing very low for the sake of a little notoriety.

If photographers would but regard the art which they have at their finger tips with a little more respect, and thereby invest it with its proper dignity, they would then perhaps see that in their works truth to himself and his own instincts is the first duty of the artist. Recognition on the part of others will follow in due course. Truth will stand, etc.!

Mr. Maskell has gone from Paris to Brussels, where he will again lecture and demonstrate on Platinotype printing, etc. In a letter he speaks very flatteringly of the extreme kindness and courteous attentions of M. Bucquet, the President of the Photographic Club of Paris, and of the members of the club generally, whose hospitality to strangers is well known to all who have had the honour of being their guests.

Yet another gelatine-chloride paper is promised to dispute the ground with the P.O.P. and Solio. The Paget Prize Plate Company, we learn, purpose shortly issuing another printing-out paper of this character. The Paget Company also have some striking novelties at the Hackney Exhibition which we refer to elsewhere.

"Photographs of the Year" is out, and is meeting with very great praise. One subscriber writes:—"I really must congratulate you on the excellence of the reproductions. They are splendid, and are in my opinion a vast improvement on the effort of last year. . . . It ought to be in the hands of everyone interested in photography as a record of the progress of our art, and what is of more importance, as an instructor."

This is merely one opinion, but we modestly refrain from any more self advertisement. Still, we really think we have to congratulate all concerned on a great success.

Some little mistake seems to have arisen, however, as we have received two letters from subscribers complaining that they have not received their copies of "Photographs of the Year," and on looking into the matter we found they had ordered our "Prize Album," not "Photographs of the Year."

"Photographs of the Year" is totally distinct from the portfolio which we shall issue at the end of the year, and which will contain permanent reproductions of the prize-winning pictures in our Monthly Competitions. If any other of our readers have been confounding the two, we hope they will write and let us put the matter straight.

Our competitions are very well supported, but we may still draw the attention of some to the same. They are:—

Nov. 31: "Optimus" Competition, £105 prizes.
„ 21: Sea Pieces and River Scenery.
Dec. 10: Monthly Lantern Slide.
„ 19: Portraiture and Figure Study.
„ 31: Holidays with the Camera.

THE MADDOX TESTIMONIAL FUND.

After a good deal of accidental but unavoidable delay the Testimonial expressing the sentiments of the subscribers to the above fund has been sent to Dr. Maddox, the cheque alluded to having been handed over to him many months ago. The actual sum is somewhat in excess of £400, as a few subscriptions came in after the fund was closed; but these amounts have been passed on to the solicitors of Dr. Maddox, and have been added to the subscription list, which was not circulated among photographers of Great Britain and the United States, but covered the Continent of Europe, India, etc. When the latter list is closed we hope to intimate to the photographic public the result of the appeal to countries other than those included in this present notice. The Committee thank the subscribers heartily for their handsome response to the appeal, and it must be a pleasure to all to know that the gift was of much use to Dr. Maddox, and is accepted by him with great gratitude. The following is a copy of the document, which is on parchment, and neatly illuminated:—"This testimonial is presented to Dr. Richard Leach Maddox with a cheque value £400 raised by voluntary subscriptions in Great Britain and United States of America, in recognition of his services to photography, and especially of his investigations in connection with gelatine emulsion. Signed of behalf of the subscribers by the Committee:—James Glaisher (Chairman), W. de W. Abney, W. S. Bird (p.p. the Autotype Co.), G. Davison, A. Haddon, A. H. Harman (for the Britannia Works Co.), Charles W. Hastings, T. C. Hepworth, A Clifford Mercer, Henry Sturmey, J. Traill Taylor, W. H. Walker, H. T. Wood, Frederick York, Thomas Bedding, Francis Cobb (Hon. Treasurer), Andrew Pringle (Hon. Secretary)."

NEW COLD-BATH PLATINOTYPE.

We are not by any means satisfied with the details of the method described below, the whole arrangement being carried out with little forethought or provision, and the details may therefore be modified as the operator may find desirable. The paper is exposed to light in the usual manner, but printed *considerably deeper* than previous platinotype experience would have taught, and, indeed, in some cases with some negatives the image may be nearly visible throughout. The paper is then removed and fastened to a stout drawing-board with drawing pins. Our own experiments were with large-sized papers, 12 by 10 and 15 by 12, and a little difficulty was experienced in keeping the entire paper *perfectly flat*, an important preliminary item. However, in whole-plate size and thereabouts a pin at each corner would probably be enough to keep the paper flat. We now arrange three little china saucers, such as are used for mixing water-colour washes in, or any similar vessels would, of course, do equally well, and in the first of these we put two parts of saturated solution of oxalate potash and two parts of pure glycerine; into the second we put one part of the oxalate of potash solution and four parts of glycerine; and in the third a little glycerine only. Thus we have—

1.

Saturated solution oxalate of potash ..	2 parts
Pure glycerine	2 „

2.

Saturated solution oxalate of potash ..	1 part
Pure glycerine	4 parts

3.

Pure glycerine

We form a little "dabber" with some cotton wool screwed up in the corner of a silk handkerchief, and proceed to rub over the entire surface of the print with plain glycerine. Rub evenly and smoothly. No alteration will take place in the print, so reasonable time may be taken. Now see that the whole surface has been treated with the glycerine, and remove any superfluity which may be standing on the surface. This done, take a fairly strong flat camel-hair brush, say half inch to one inch in width, and having charged it with the solution in No. 2, pass the brush quickly and evenly over the least visible portions of the image, or such parts as you believe likely to be too white and wanting in detail. No change probably will be immediately visible; this is as it should be. Charge the brush again, and passing over the portions already done, extend the treatment to such parts as are slightly more visible. After an interval of a few seconds you will notice those parts which have been treated with the solution commence to develop up and grow gradually darker. When this has continued for a little time, re-charge the brush, and pass the solution over the entire print, except, perhaps, some limited spaces which are very dark, which may be left yet a little while. The whole picture will now commence to gain depth, and the contents of saucers Nos. 1 and 3 will be called into requisition—No. 1 to *stimulate* the growth of the image when it seems likely to be left behind by the rapidly darkening portions of the shadows; and No. 3, which is plain glycerine, may be laid on by a smaller brush to *check* and restrain too rapid development. In this manner hand and eye are busily engaged watching development, accelerating and retarding the action of each application of solution. At just the moment which is thought advisable the extreme darks may receive their share of solution, and some of the very obstinate whites may be touched with a little plain oxalate of potash solution. Glance quickly over the whole, and if you consider the result is what you desire lift the bath from the board and plunge it in the acid clearing print—hydrochloric acid 1 part to 60 of water.

Now, if we have conveyed a clear idea of what should be done, it will have become apparent that by the proper use of the oxalate of potash solution and the glycerine in various proportions and degrees, the whole image is under the control of the operator's brush. Dark objects may be held in subjection and never allowed to proceed beyond a light grey, and lighter portions, such as sky, water, or distances, which would come too light because of over-density in the negative, may (if the whole picture be printed fairly deep) be developed up to the desired depth by constantly stimulating with larger proportions of oxalate solution by the time the darker regions have caught up. In every other respect as to storing of the paper, the acid clearing, washing, and drying, the new paper in no way differs from the older and better known hot-bath papers. The finished print is much brighter than formerly, probably owing to the glycerine keeping the image from "sinking in," and the colour is a clear black, sometimes even a cold blue-black. This colour is, we find, capable of great alteration, and we will return to this part of the subject at a later date.

NOTES ON COLOUR.

IV.—COLOUR PRODUCED BY ABSORPTION.

(*Continued from page* 208.)

WHEN speaking of opaque and transparent substances we find that gold, though opaque when thick, became, when suitably diminished in thickness, capable of allowing some light to pass through, which was bluish-green. We shall now proceed to try and give an explanation of this phenomenon.

Let us take three pieces of glass, one deep red, one a deep orange, and one deep blue. Laying these three pieces of glass flat on a piece of black cloth, we find then that they all reflect white light, and we have no indication of their respective colours, but if these glasses are raised and placed between the eye and the source of light, we at once discover their colour. What is the reason of this? Has the red glass power to change white light into red, the yellow the power to change it into yellow, and does blue glass convert it into blue? The answer to this we must seek by the aid of our prism or prisms. As we tested white light in our first chapter, so we must test our coloured light. For this purpose it is only necessary to place over the hole in the shutter a piece of the coloured glass, and then examine our spectrum to see what happens. The result is shown in the following diagram.

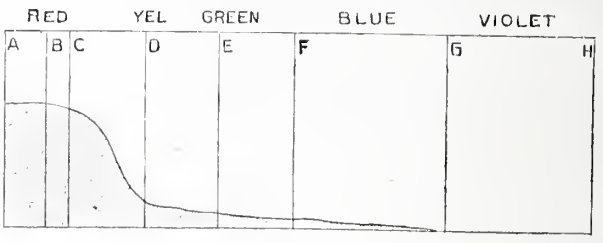


FIG. 2.

We know that when white light falls upon the prism we obtain a spectrum of all colours, but when red glass is placed over the slit, we obtain a result as shown above fig. 2; when the yellow glass is placed over the slit a result fig. 3 is given; when blue glass is used, a result fig. 4. Therefore we must arrive at the conclusion that red glass does not convert white light into red, but merely holds back, refuses to admit, or absorbs all but the red rays and a few orange. In the case of the yellow glass, the orange and yellow rays are most prominent, the blue, violet, and blue-green being refused admittance; and in the case of the blue glass, the red and the yellow are no longer visible, only the violet, blue, and bluish-green, the latter more faintly. To make this point still clearer, let us obtain the ordinary spectrum in the usual way, but instead of examining it by the naked eye, let us look through the red glass at it, when only the red is visible, as shown in fig. 2, *a*, and when viewed through the yellow and the blue glass, we see results like fig. 2, *b* and *c* respectively.

We have thus far considered one thickness of coloured glass only. The point arises as to what is the effect of using different thicknesses. This point was carefully considered by Sir John Herschel in his "Treatise on Light," and he states that if we know that a given thickness of any medium absorbs a given proportion of light incident on its surface, then a second thickness of the same medium will absorb the same proportion of light that is left; that is to say, if in passing through one sheet of red glass one-tenth of blue light is absorbed, so after passing through a second sheet of red glass one-tenth of the blue light that the first allowed to pass through is absorbed. To make it plain let us turn to our table of the amount of coloured light in 1,000 parts of white light, and assuming that we have a sheet of glass which will allow, for every centimetre of thickness, nine-tenths of the visually active rays to pass and will absorb only one-tenth, whilst for the chemically active rays this given thickness of glass absorbs one-half of the chemically active rays, and therefore only allows ·5 of these rays to pass, we may draw up a table which will represent the action of any number of thicknesses of glass,

if we take the amount given in the above-mentioned tables as the values of the different colours.

Thickness.	Intensity.	
	Red.	Blue.
0	769	231
1	692·1	115·5
2	622·8	57·75
3	560 6	28·8
4	504·6	14·4
5	454·2	7·2
6	408·8	3·6
7	368·0	1·9
8	331·2	·9

Further than this we need not carry our table, but this will show us how it is possible for a certain coloured glass to so far absorb the blue and violet rays to make it fit for use in a dark-room, if we suppose also that the first thickness of coloured glass is very minute. Reasoning from this we may see that if we take, for instance, a very pale yellow glass, and gradually increase the thickness, we absorb an infinitely greater proportion of blue and violet rays to what we do yellow and red. The practical application of this will be seen when speaking of coloured screens. If we go on increasing our thicknesses of yellow glass the hue changes gradually from yellow to orange, from orange to orange red, and finally from orange red to deep red, till, if we could increase the thickness sufficiently, we should obtain perfect darkness. A proof of this is seen in the case of water. When of immaterial thickness it is white or colourless, allowing all rays to pass equally; increase the thickness and the red rays are absorbed, the water becoming blueish; increase it still further, and we obtain perfect darkness.*

If we wish to obtain a graphic representation or picture of the action of certain substances on the spectrum, it is extremely easy to do so. It is difficult to do this by shading on paper, but it is possible and easy by drawing a rectangular figure which shall represent the solar spectrum and drawing a curve through it, agreeing at the same time that the height of the curve above the base line shall represent the luminosity of the spectrum at this particular point. Fig. 2 will thus show the action of red (fig. 3) and orange glass (fig. 4) on the spectrum.

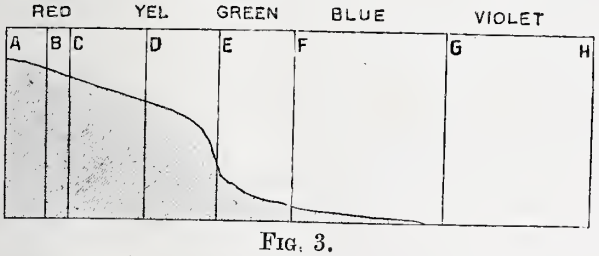


Fig. 3.

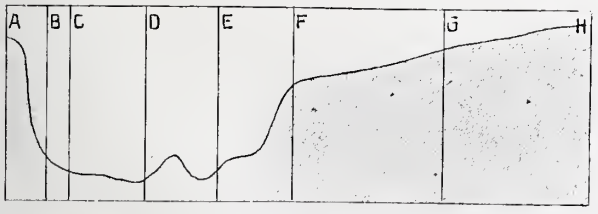


Fig. 4.

If we consider now the question, not of coloured glass, but natural objects, such as green leaves, scarlet geraniums, a white lily, or any other object, we shall find the subject much simplified by the above statements, and also by the following experiment which is taken from Glazebrook's "Physical Optics," p. 269:—"Let up suppose that we enclose a perfectly clear solution, sulphate of copper, for example, in a black vessel open at the top, so that no light can be transmitted through it or reflected from the sides of the vessel, and look at it from light from above. The solution looks black, and if we examine the image of a white object seen by reflection at the surface, the image is colourless. All the rays are reflected according to the same law and so nearly in the same proportion that we cannot distinguish any alteration in colour. The clear transparent blue liquid reflects all rays practically alike, and itself looks colourless. But now suppose we make our solution slightly turbid by introducing some fine powdered chalk. The solution appears to be a brilliant blue. Let us follow the course of an incident white ray; some of it is reflected from the surface, but the rest is refracted into the liquid. Now our blue solution absorbs all red light which falls on it, and, therefore, after passing through a very small thickness of the liquid this refracted ray is practically a blue ray. This blue ray falls on a small particle of the powdered chalk, and is reflected by it upwards, and on emerging again from the surface reaches our eye. The blue light which we see, and which gives to the solution its colour, has been reflected to us, not by the surface of the liquid, but by the small particles in its interior. It has passed through some thickness, greater or less, as the case may be, of the solution, and thus the red and yellow constituents in the incidental white light have been removed; the blue alone remains to emerge and reach our eye. And just this has happened in our leaf or flower."

In the case of the green leaf the colouring matter acts, as we have seen, precisely like the chalk in our copper solution, except that the green rays are reflected. In the case of the scarlet geranium, the red rays, mixed with some orange, are alone reflected. In the case of the lily, although the rays are absorbed and irregularly reflected, they are all reflected in about equal degree, hence the white colour. To prove this as an actual fact also, let us again return to our spectrum and pass our lily slowly along. In the blue it appears blue; in the green, green; in the yellow it turns yellow, and finally looks red in the red. If, however, we treat our scarlet geranium in the same way, we find that it looks black in the blue, black in the green, showing slightly as we near the orange, and glowing with increasing brilliancy as we pass into the red.

We may thus agree with Tyndall and accept his statement as a conveniently expressed law. "Natural bodies possess the power of extinguishing, or, as it is called, absorbing the light that enters them. This power of absorption is selective, and hence, for the most part, arise the phenomena of colour. When the light is wholly absorbed the body is black; a body which absorbs all the waves equally, but not totally, is grey; whilst a body which absorbs the various waves unequally is coloured. Colour is due to the extinction of certain constituents of white light within the body; the remaining constituents, which return to the eye, imparting to the body its colour. It is to be borne in mind that bodies of all colours, illuminated by white light, reflect white light from their exterior surfaces. It is the light which has plunged to a certain depth within the body, which has been sifted there by elective absorption, and then discharged from the body by interior reflection, that in general gives the body its colour."*

* See "American Annual of Photography," 1890, p. 83.

* Tyndall's "Notes on Light," pp. 35-38.

Letters to the Editor.

GELATINO-CHLORIDE PAPER.

SIR,—I read in your journal, November 4th, "Notes on the Permanency of Gelatino-Chloride Prints," by Mr. W. E. Woodbury. While generally agreeing with Mr. Woodbury in his remarks, he claims to have introduced the gelatino-chloride process into this country. Allow me to point out to him that he is mistaken, and that he has not introduced the gelatino-chloride process into England.

The late T. B. Obernetter was for many years *the only* maker of the collodio-chloride paper which bore his name, and still does now. It was in 1885 that Obernetter produced his first issue of gelatino-chloride paper, before the name of Aristotype had been heard of. At that time he offered me the consignment of this paper, and I accepted and introduced into the English market then, and held stocks of it early in 1886.

If Englishmen owe anything to any one for the introduction of this process it is to me and to the excellent quality of the article as manufactured by Obernetter.

As with plates and many other commodities of the photographer, the cult of cheapness set in, and with starved plates go hand in hand sparingly silvered emulsion papers. Quality is too slow a thing in these days of competition.—I am, yours, etc.,

J. R. GOTZ.

* * * *

MASON'S TONING BATH.

SIR,—Further experiments have convinced me that better results are obtained with this bath by mixing the salt and sulphocyanide just before use—not keeping them ready mixed. I get better colours and I think less tendency to pink tones. I send you some prints, which are not so black as some, but are, I think, of a pleasing colour.—I am, yours, etc.,

CLIFFORD E. F. NASH.

NOTE.—The prints sent are a very good tone.—EDITOR.

* * * *

ENAMELLING SILVER PRINTS.

SIR,—I have been trying lately to enamel some old silver prints, and have got on very badly indeed. I have not succeeded in stripping a single print out of some seven which I have put through the process, each one on a separate occasion, and I want some help or advice.

I have taken an old negative glass, washed it well with soap and water, dried it, and then treated it either with turpentine or with French chalk, or with both of them. I have then coated the glass with enamel collodion, allowed it to set until it would take the impression of the skin upon any part of its surface, and immersed it in water, sometimes cold, sometimes warm, and sometimes direct into the gelatine solution mentioned below.

I have prepared a solution of Nelson's No. 1 gelatine, 16 gr. to the ounce of water, in the usual way, soaked the print in it for from one to three minutes, sometimes direct, *i.e.*, dry, and sometimes after a preliminary soaking in water only, keeping the gelatine solution at about 100 deg. more or less. I have now immersed the collodionised glass plate in the solution, underneath the print, and withdrawn them both together, placing them generally upon something rather warm. I have then got a "rubber cloth" and squeegee, and pressed as lightly as possible consistent with the removal of air-bubbles, blotted, and set away for twelve hours or more to dry. I have generally then given the plate and print a final warming just before attempting to strip, and, as I have stated above, I have not succeeded in a single instance in getting the print to leave the glass at all.

I should be extremely glad to know the cause of my failure, and to know what mode of procedure will ensure a good chance of success. I have used two different samples of enamel collodion, but the results have not been affected by the change. I may say I am accustomed to finishing gelatino-chloride prints with enamel surface. THERMO.

* * * *

EARLY PHOTOGRAPHS.

SIR,—If not already recorded, may I call your attention, for insertion in your valuable journal, as a contribution to the history of photography, to the following extract from page 87 of "Elements of Experimental Chemistry," by Wm. Henry, M.D., F.R.S., eighth edition, vol. ii., published by Baldwin and Co., and H. Hunter, in London, in the year 1818. A year or two ago some photographs were discovered in an old shop in London which were evidently very old, and as they answer to the description of the process described in this extract, were probably the work of Mr. T. Wedgwood. The English discoverers in photography are comparatively a neglected race, but this should not be. Even the inventor of the gelatine dry plate process is hardly known by its numerous followers. Had he been a Frenchman, a statue would have been erected, and fresh glory claimed by that nation.—I remain, yours, etc., WM. LONDON.

November 9th, 1892.

"White paper, or white leather, when stained with a solution of nitrate of silver in the proportion of ten parts of water to one of the salt, undergoes no change in the dark, but when exposed to the light of day it gradually acquires colour, and passes through a succession of changes to black. The common sunbeams passing through red glass have very little effect upon it; yellow and green are more efficacious, but blue and violet produce the most decidedly powerful effects. Hence this property furnishes a method of copying paintings on glass, and transferring them to leather or paper. The process is described by Mr. T. Wedgwood in 'Nicholson's Journal,' 8vo., iii., 167. By a similar process ivory may be covered with silver. Let a slip of ivory be immersed in a dilute solution of pure nitrate of silver till the ivory has acquired a bright yellow colour. Then remove it into a tumbler filled with distilled water and expose it to the direct light of the sun. After two or three hours' exposure it will have become black, but on rubbing it a little the surface will be changed into a bright metallic one resembling a slip of pure silver. As the solution penetrates deep into the ivory, the bright surface, when worn away, is replaced by a succession of others."

An account of Wedgwood's experiments was contributed by Davy to the "Journal of Royal Institution," 1802.—EDITOR.

* * * *

THE LEYTONSTONE EXHIBITION.

SIR,—May I venture to ask you to kindly allow me, through your columns, and on behalf of the Leytonstone Camera Club, to thank those numerous ladies and gentlemen who sent pictures to our exhibition, and we assure them that their general excellence was duly appreciated by the hundreds of spectators who thronged the halls. The vast number of exhibitors renders it impossible to thank each person individually, moreover the unprecedented and unexpected success has given me so much extra work that any little failing on my part as to prompt answering of the numerous letters that I have received, and other shortcomings, will, I trust, be excused. Once more sincerely thanking one and all who contributed to one of the most successful exhibitions that has yet been held,—I am, etc.,

Rose Bank, South-West Road, Leytonstone. ALBERT E. BAILEY (Hon. Sec., Ex. Com.)

* * * *

WINTER PHOTOGRAPHY.

SIR,—The paper by Miss Barnes in last week's AMATEUR PHOTOGRAPHER will appeal to all who read it. I am a clergyman's wife in a busy town, and very restful and helpful do I find my half hours in my dark-room or out with my camera. I am only a very lowly amateur yet, although I intend to struggle on until I win a gold medal from you, but I am so convinced of the physical and moral good to be gained from photography in earnest that I am trying to interest my children in it and bring them up as enthusiastic and real workers. Your paper is a help to me. I am a lonely worker with only very limited time to spare, an hour here and there, and this week's issue has been a special delight, the paper on outdoor winter photography echoes so many of my thoughts and experiences. A kind friend has taken me and my beloved camera out for a two hours' drive once a week the last three weeks, and, oh! the beauty of the leafless trees, battered undergrowths of ferns and hemlocks, and straggly briars, and the reflections in still pools and mists over the river! I send you a rough print taken about ten days ago, which will show you that I have cause to rejoice in the subjects I find, although I cannot get far from the town. Of course, it is cold and wet, but a cup of hot tea before starting and a pair of snow boots and wide open eyes make me forget all minor inconveniences; and then when I can steal an hour and get to developing, how happy am I! I have thoroughly taken to pyro developer (3-solution), and, except for lantern slides or occasional snap-shots, I use no other, and although I am an unskilled worker yet, you

will understand that a rosult like the enclosed, faulty as it is, does stir one up to try harder, and I am finding these autumn mornings a revelation of beauty and instruction. I see a good deal said about dark-rooms. I had to study economy, but I have such a cosy little one; just a few shelves and a thin deal roof closed in by turkey-red twill (part of an old bed hanging). The door is a framework of deal covered with turkey-red, and the little room is at the end of our big bath-room. I have a tin basin as sink, with an india-rubber tube to carry off dirty water down the bath waste pipe, and the whole thing cost very little and is most cosy, and my chemicals are never ice-cold, for the hot-water cistern for the bath is also in the room. I wish your readers, both ladies and gentlemen, would try what can be done with a few laths and shelf boards and *two* thicknesses of turkey-red twill.—I am, yours, etc., SELF-HELP.

* * * *

"PHOTOGRAPHS OF THE YEAR."

SIR,—Amongst the pictures reproduced in "Photographs of the Year" (upon the success of which I congratulate you and your publishers), one that in my humble judgment calls for special admiration is "In the Pool." The cloud effect in this is really grand. What I particularly wish to call attention to, however, is the peculiar greenish-blue tone so admirably adapted to the subject. Of course, in a reproduction, one cannot judge of the tone as in the original, but this would certainly convey the idea of being something more than a bluish-black platinotype. If this be the case, and my surmise that some special process of toning a bromide print was employed be correct, would it be going too far to ask Mr. Bennett to tell us how it is done?

I am sure he would greatly oblige many of your readers, besides,—Yours, etc., HENRY J. KNIGHT.

The original was a uranium-toned bromide, we believe, a very rich warm brown, but we thought the green would be more suitable. A brief note on green tones appears in editorial.—ED.

* * * *

LANTERN SLIDE PRINTING FRAME.

SIR,—In your notice last week of the lantern slide printing frame, introduced by Mr. Tylar, there were several particulars omitted. This frame is the invention of Mr. J. Ashford, 179, Aston Road, Birmingham who has patented it in conjunction with Mr. Tylar, the latter having the sole agency for its sale. This being a protected article, it is just as well that it should be known, as it might prevent misunderstanding in future.—Yours, etc., J. ASHFORD.

* * * *

CURIOUS OLD CUSTOMS.

SIR,—I am desirous of making up a set of lantern slides illustrative of old and modern curious customs, and shall be pleased of the co-operation of any of my brother amateurs. Any photographs or negatives sent to me bearing on the above subject will be thankfully accepted, and in exchange I shall be pleased to offer a lantern slide of the "horns dance" at Abbots Bromley, or the scene of "Dr. Johnson's penance."

As a guide, I might say that any of the following subjects will be most suitable: May-pole dancing in olden and modern times, trial by ordeal, witch burning, gull swarming, bull baiting, village stocks, Lord Mayor's procession, hanging in ye olden days, well dressings, Guy Fawkes celebrations, coaching, etc.

The above will be sufficient to indicate the nature of the photographs required.—Yours, etc., GEO. ELLIS.

Uttoxeter, Nov. 13th, 1892.

* * * *

CHLORIDE PAPER.

SIR,—In reply to Mr. W. F. Wilkinson (p. 300), I should define "a small scraping of chalk" and "a small bit of washing soda" as a sufficient quantity to neutralise any acidity that might be present in the chloride of gold and the hypo solution.

Testing for acidity is made by blue litmus paper, which is reddened by acids. Speaking approximately, 10 or 15 gr. of chalk for the 15 gr. of gold, and 2 or 3 drm. of soda to the 3 oz. of hypo will be sufficient. Prints will be fixed in fifteen to twenty minues if moved about from time to time. There are no means by which one can tell when fixation is complete. Untoned prints on this paper are durable, but are not a pleasant colour.—I am, yours, etc., EDWIN UNDERWOOD.

Apparatus.

THE "IMPERIAL" PLATES.

THE Imperial Dry Plate Company have made a very important advance in dry plates. Only a few months ago the most rapid plates on the market only registered eighty on Watkin's scale. Now this firm are turning out in quantity plates which show 150 on Watkin's scale, equal to 100 on Hurter and Driffield's scale. This advance in speed is a great boon, and we really may assume that we shall have instantaneous shots taken at times and in lights which heretofore would have been impracticable.

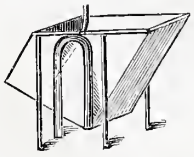
BLACKWOOD'S VARIOSCOPIC LENS.

MESSRS. F. DARTON AND CO., of 124, St. John Street, Clerkenwell, are placing upon the market the above lens, which consists of an ordinary rapid rectilinear lens with convergent or divergent lenses of varying power which can be placed between the combinations, thus giving great range of covering power and foci.

The set is packed in a neat leather case, and it will form a very useful set for those desiring to use various foci lenses without much trouble.

SMITH'S PATENT PLATE WASHER.

SMITH AND SON, of 102, Parade, Leamington, have introduced a very practical washer. The makers point out the fact that the requirements for washing prints are different from those for plates, and their washer is intended for plates only.



As will be seen from the illustration, the plates are placed with the film sloping downwards, a position which ensures rapid removal of the heavy hypo-saturated water, whilst also preventing any dirt or mechanical impurity settling on the films. The water inlet is so arranged that the bottom of the tank is kept clean and free from deposits, and a large syphon empties the tank every five minutes.

This washer is very practical, well thought out, and acts very efficiently, eliminating the hypo in a really very short time, with as little expenditure of water as possible.

THE "LECTURER" CANDLE LAMP.

MESSRS. BENHAM AND FROUD, of Chandos Street, W., have introduced a new lamp for lantern readings. As we shall have an opportunity of practically trying it this week, we shall report on the same in "Our Lantern Screen" next week.

ALSTON'S SYPHON AND WASHER.

MR. F. ALSTON, of 211, Ladypool Road, Birmingham, has sent us a sample of his new automatic syphon and washer. It is a convenient and effective little piece of apparatus, which allows one to utilise any vessel, bath, or pail for print or plate washing. The water is kept in continual motion, and a syphon takes off the hypo-laden water.

We have actually tested this, and find that it eliminates the hypo in a surprisingly brief space of time. It is effectual and cheap, the price being only 3s.

Photographic Paper for Copying Tracings.—A photographic paper for copying tracings, which gives black lines on a white ground, is being put on the market by Schwenke, Kirk, and Co., of 26, Church Street, New York. Not only has this paper the obvious advantage over ordinary blue prints of giving more suitable colours for the ground and lines, but after exposure in the printing frame the only treatment required for developing and fixing is a plain water bath. A paper of this sort has long been desired by engineers, and many inventors and chemists have searched for years for some compound which could be used in the preparation of such a paper. The compound appears to be an organic substance, which can be bleached by the sun, but is precipitated as a dark purple powder when it and its suspending medium are brought into water. This powder forms a black deposit in the paper and is quite permanent. The price of the paper is not any higher than the best blue-print paper, and it entails no expenditure for developing chemicals.

How to Make a Set of Photographic Apparatus.

By H. J.

(*Continued from page* 286.)

CHAPTER XI.

A WALKING-STICK TRIPOD AND A DEVELOPING TRAY.

IT is sometimes difficult to hold a hand-camera sufficiently steady for time exposures especially, therefore it is convenient to have a screwed nut inserted in bottom and side of camera, so that a tripod can be used if necessary; but then another difficulty comes in, the ordinary tripod being too heavy, and requiring too long a time for erection to suit the ideas of the hand-camerist. In order to meet this difficulty, light tripods have therefore been introduced, and as a walking-stick is nearly as useful as the tripod, the most popular form is capable of forming both articles, and this being the case, I have arranged the subject of this paper "a double debt to pay," and I hope that it will be properly appreciated by my readers.

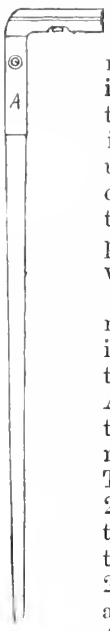


FIG. 87.

The height of the article must be regulated by each individual maker according to his own requirements. As I am fairly tall myself, the following measurements are such as suit me. The stick when closed is 2 ft. 9 in. high, and, as a tripod, is adjustable from the same height to 4 ft. 2 in., and can be fixed at any height between the two instantly, as well as being opened and closed very quickly. Fig. 87 shows the stand when closed as a walking-stick, and fig. 88 shows it in use as a tripod, only two legs being drawn, for the sake of clearness.

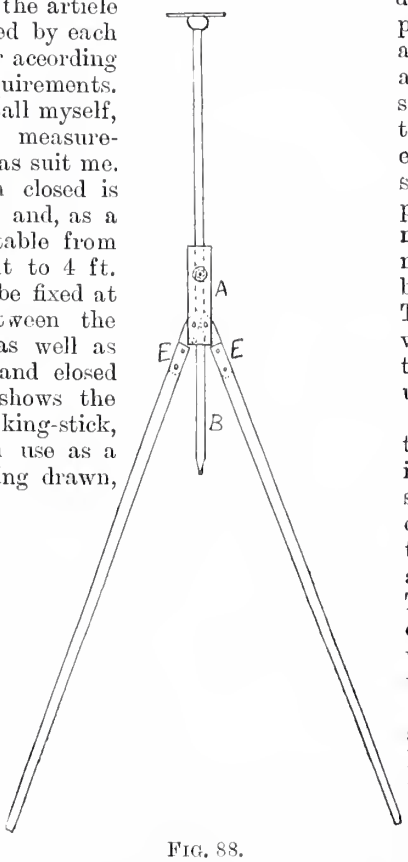


FIG. 88.

To make it, we shall want first a piece of wood 6 in. long and $1\frac{1}{4}$ in. square—this can be any kind of tough wood (American white wood answers the purpose very well, being both tough and light); also a piece of brass tubing 2 ft. 9 in. long and $\frac{3}{8}$ in. outside diameter. A hole must be bored through the centre of the 6 in. block lengthways, so that the brass tube will just slide to and fro in it easily but not loosely. The block can then be rounded up, so that the hole is straight through the middle. This block is marked A in the figures, the brass tube being marked B.

The legs must be prepared. They will require to be 2 ft. 3 in. long, but had better be cut off 3 in. longer, for a reason to be given later on. Cut them out $1\frac{1}{4}$ in. by $\frac{1}{2}$ in., and plane the edges so that the three will fit together as shown in fig. 89, the marks C C C showing the joints. Do not plane either outside or inside yet, but make each joint fit perfectly the whole length, and both inside and outside. This is rather a ticklish job for an amateur, but it can be done, and it is worth doing well, as upon it depends the look of the walking-stick when finished. The inside of the three pieces must now be hollowed out, so that when they are all placed together there is a round hole through them, slightly larger than that through the block A. After the inside is finished, the three legs must be screwed together about an inch from each end (this is what the extra 3 in. in length is for, so that the screw-holes can be cut off when

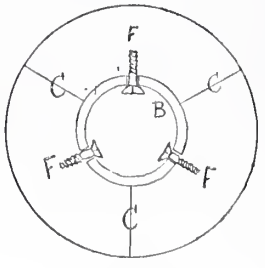


FIG. 89.

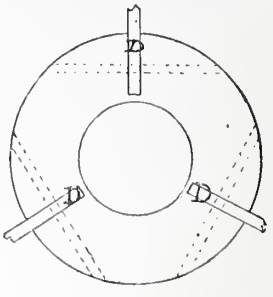


FIG. 90.

done with), sinking the heads of the screws well in; then plane them to a circle, tapering them towards the bottom according to the fancy, and finish it off with sand paper, and then mark them so that they can be put together the same again. The ends can now be cut off, doing away with the screws, and a brass tongue inserted in the large end of each leg as at D, fig. 90, fixing them there by two rivets as shown at E, fig. 88, and leaving about an inch of the brass plate projecting above end of leg. Corresponding slots must now be cut in the block A, and the legs hinged by means of pins passing through the block and through the brass plates; these pins are shown by dotted lines in fig. 90. The brass plates and pins can now be filed off level with the wood, and if my instructions have been followed carefully, the whole will now form a stick 2 ft. 9 in. long when closed up.

In the centre of each leg, at about an inch from the bottom, a small screw must now be inserted as at F, fig. 89, and in one end of the brass tube mentioned above cut three slots, so that when the legs are closed and the tube pushed down, the slots will slide over the screws, and bind the three firmly together. The slots can be widened at the end so as to slide on easily, and to work tight only at the bottom, or, when in use, the top of the slot.

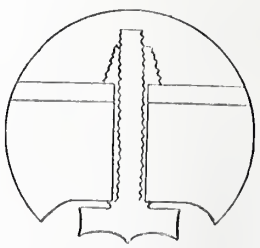


FIG. 91.

This finishes the leg of the stand, and we will now get on with the handle of the stick, which also forms tripod top, unlike most of the walking stick stands in the market, which are furnished with a small triangle and which has to be carried separately. For this handle we shall require a piece of wood 5 in. long, $1\frac{1}{2}$ by 1 in., also a piece the same length and width but only half the thickness, also a brass plate $4\frac{3}{4}$ in. long, $1\frac{1}{4}$ in. by $\frac{1}{16}$ in.; this brass plate must be cut in three pieces, as shown in fig. 92 at G. One of the small pieces can be screwed on at one end of the thickest piece of handle and the other one towards the other end, leaving space enough between them so that the longest piece will fit between the two, as in fig. 92. Now hinge the two pieces of handle together at the end where the brass plate is level

The latter of course will have to be filed away, to allow the hinge to be sunk in. A hole must also be drilled in the small plate at the other end, and a pin inserted in the top hinged piece to fit it (the hole is shown at H, fig. 92); this is to keep the two together when closed. The small plate at the free end must now be unscrewed, and a hole bored to take the end of brass tube, which can be fixed after it is cut to the exact length to reach from bottom of legs when closed to the top of thick part of handle by slitting it down about an inch with an old saw, and then conntersink the hole in handle (that is, make it larger at the top), and place the tube in position and wedge it open with wooden edges so as to fill the hole; this forms a dovetail and makes a firm job of it, but care must be taken not to wedge hard enough, to split the handle. The hole I must now be drilled through the loose piece of brass plate, and also through the thick part of handle; this must be exactly in the centre both ways, and must be the right size to take a small milled-head screw, the nut of which must be inserted in the top part of handle, so that the screw will hold all the parts together. A nut must also be inserted in the camera fitting the same screw, as it is the means by which the camera is fixed to stand. A recess must be cut out underneath the handle for the reception of the above screw, as shown at fig. 91. A plug nut must now be inserted in the block A; this is for the screw which holds the stand at the height requ and also keeps it closed when in use as a stick.

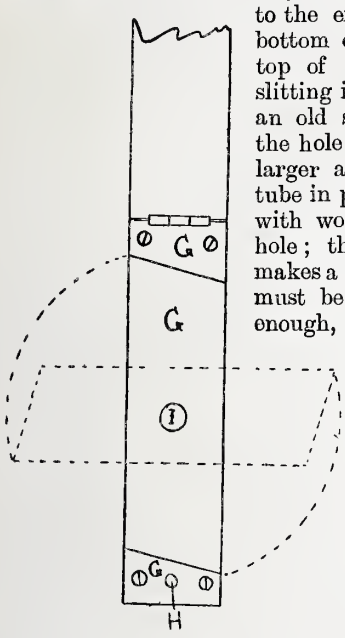


FIG 92.

The stand can now be closed and fixed by the above mentioned screw, and the handle finished off to the size required. The brasswork will have to be filed; indeed, it will be the best way, after taking the wood roughly to the size, to finish both wood and brass with the file; a touch of glass paper will then make it right, after which it will only require staining and polishing.


FIG. 93.

It is a good plan, in order to prevent the bottoms of legs wearing when in use as a walking stick, to insert a metal plug in the bottom of tube, allowing it to project about


FIG. 94.

half an inch beyond the legs. Care must be taken to keep the plug away from the slots, or it will prevent the legs from closing properly.

I will now say a few words as to the manner of using this stand, and then I have finished. We will suppose that we are just arrived at a spot where a plate is to be exposed and require the stand, which so far has done duty for a walking stick. First slacken the screw in block A, and draw out the tube to the requisite height, and tighten the screw again; spread open the legs, and plant them firmly on the ground; then unscrew the screw in handle until the top part can be folded back out of the way, turn the brass plate round at right angles as shown by dotted lines in fig. 92, and insert the screw in camera and tighten up. The three pieces of brass now form a good broad basis for the camera to rest on, and it will be found to be quite firm, while the ease with it can be changed from stick to stand, and *vice versa*, and also that it has no loose parts, being absolutely self-contained, will I think recommend it to all. The fittings required are very few, and can be obtained almost anywhere, but for the benefit of my readers I will give my

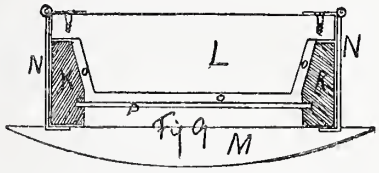


FIG. 95.

usual list of necessaries and prices of same, which will compare very favourably with those charged for similar stands, many of which are not half so serviceable and handy as this one.

List of fittings required :—	s.	d.
Two milled-head screws	0	9
Three brass plates for hinges to legs ..	0	9
Brass plate for handle	0	4
Hinge for ditto	0	1
Brass tube, 2 ft. 9 in. long, $\frac{3}{8}$ in. diameter..	1	6

A Glass Bottom Developing Tray,

These trays are so easily and cheaply made that I often wonder why there is any sale for the ordinary kind at all, especially the more expensive ones, though I suppose the reason is the same as with the rest of the apparatus, the more money that is paid for it the better it is supposed to be. To make good, serviceable developing trays it is only necessary to prepare a piece of wood 1 in. by $\frac{3}{8}$ in., of the section shown in fig. 93, and long enough for the tray you wish to make; then cut it in four pieces and prepare the corners for putting together in the same way as I recommend for the camera body in Chapter I.

When ready for putting together, nail one side on the two ends, then fill the grooves all round with white lead or putty, and slide a piece of glass in them and nail on the other side. Now clean off the outside at the joints, also wipe away all the surplus putty which has squeezed out of the grooves, and then give the rim and the glass all round, about half an inch, two coats of good enamel both inside and out. This finishes the tray, and it will be found perfectly watertight, and will last for years. If a well is required to the tray, it can be formed by simply nailing a piece of wood about an inch wide on top of the frame at one end, and enamelling it well inside. By doing this the tray can be turned on end with the developing solution in it, for the examination of plate, which need not then be touched with the fingers during development; this will be found to do away with the principal cause of stained negatives.

The above is a good form of tray for developing one plate at a time, but it is often necessary to do three or four at once especially by hand-camera workers. The following tray is designed so that it will take eight quarter-plates or four half-plates, or both quarter and half plates at the same time, and of course the same can be adapted to take quarter and lantern plates or any other sizes, though the sizes I am about to give are for the first mentioned.

First prepare sufficient material for the sides and ends, of the same section as mentioned for the first tray, but of double the thickness; fit it together at the corners so as to form a frame 2 ft. 6 in. by 4¾ in.; before nailing together level the long pieces so that they are of the same section as K K, fig. 95. The frame can then be nailed together, bedding in the glass bottom with putty as before, and cleaning off and enamelling as well in the same way.

When the enamel is set hard, make seven pieces for divisions, as at L, fig. 95. As will be seen, they must be cut so that when the projecting pieces at the ends are resting on the sides (K), both the ends and the bottom are a bare eighth of an inch away, or, in other words, there is a clear space of an eighth of an inch (bare) between the ends and bottom of division and the sides and glass bottom of tray.

A piece of india-rubber must now be fixed round the division, so as to form a water-tight joint, then on each end a clip hinge must be screwed, so that the clip catches under the bottom of tray and holds the division down tightly.

I have only mentioned one division, but the tray will require seven when filled with quarter-plates, though only three when developing half-plates. They must be all made exactly alike, so that they will fit at any part of the tray. It is then quite possible to be developing different makes of plates at the same time and in the same tray, thus giving a better chance of comparing the various virtues and faults of each much easier than when done separately, or different developers can be compared in the same way and yet kept quite separate.

This tray can be still further improved by the addition of a pair of rockers, one of which is shown at M, fig. 95. A slight touch will then keep the developer in motion much better than rocking by the hands, and it will also leave the hands free for making notes, etc., the reason the latter is so much neglected being often through both hands being fully occupied with other things.

The necessary fittings for this tray are as follows:—

	d.
India-rubber for divisions, per foot	8
Clip hinges for ditto, per pair	4

In my next paper I shall give a description of more novelties in dark-room fittings, etc., and this will conclude the series, for the present, at any rate.

CHAPTER XI.

DESCRIPTION OF FIGURES.

Fig. 87. Walking stick tripod, closed.
,, 88. Ditto, erected.
,, 89. Section of ditto, at bottom, when closed.
,, 90. Ditto, ditto, at top of legs, showing joints.
,, 91. Ditto of handle, showing camera screw.
,, 92. Detail of handle when forming top.
,, 93. Section of side of developing tray.
,, 94. Plan of improved ditto.
,, 95. Section of ditto.

REFERENCES TO LETTERS.

A. Block to which legs are hinged.
B. Brass tube forming lengthening piece.
C. Joints of legs when stand is closed.
D. Brass plates to hinge legs to block A.
E. Method of fixing ditto.
F. Screws to fix stand when closed.
G. Brass plate (in three pieces) in handle forming triangle.
H. Hole for pin.
I. Ditto for camera screw.
K. Sides of improved tray.
L. Division of ditto.
M. Rocker for ditto.
N. Clip hinge to hold division in position.
O. India-rubber.
P. Glass bottom of tray.

Review.

Lumière, Couleur, et Photographie. By Louis Calmette. Published by Société d'Editions Scientifiques, 4, Rue Antoine-Dubois, Paris. Price 2 fr.

In this work the author has been working on the same lines as in our leading articles "Notes on Colour." He first considers the composition of light and colour, and then treats of the different action of coloured screens, etc. A succinct summary of the principal features of orthochromatic photography and the method of sensitising plates follows, and very clear directions on the practical use and application of the plates are included. Finally the author includes a brief summary of Heliochromy. The work is well written, and includes the most recent developments.

Guide to the Seience of Photo-micrography. By Edward C. Bousfield, second edition. Published by J. and A. Churchill, 11, New Burlington Street, W.

Mr. Bousfield has brought his well-known work well up to date, and it will now form a very useful text-book, both for the microscopist or photographer who desires to take up photo-micrography. He is not afraid to give explicit directions how to photograph or how to use the microscope; and to the young worker his exposure table will be found of very great value as saving many failures. A final appendix on the preparation of sections for photo-micrography and an excellent index complete the work.

The Gentlewoman Christmas Number. Published at Howard House, Arundel Street, Strand, W.C. Price 1s.

The chief literary feature is somewhat novel. "A Story of Seven Christmas Eves," or "A Social Evolution," is the life of two waifs, of gentle birth, who pass through many vicissitudes to positions of honour and distinction. The chief incidents of their lives are supposed to be narrated on Seven Christmas Eves, at intervals of seven years, by the characters who themselves take part in the story. The authors who tell the tale are Clo Graves, G. Manville Fenn, Mrs. Campbell Praed, B. L. Farjeon, Florence Marryatt, Justin H. McCarthy, and Clement Scott, the illustrations being by Dudley Hardy. Sir Walter Scott's seasonable verse, "Christmas in the Olden Time," is illustrated by five pages of appropriate pictures by distinguished artists, and there is a double page drawing of Cat Life, "Snap Dragon at Pussey Cat's Christmas Party," by Louis Wain.

The special pictorial feature is a very fine reproduction in colours on satin by means of three process blocks. This in itself is specially interesting as an example of heliochromy, and with the literary matter and the ordinary black and white illustrations the whole is a very good number.

The Young Gentlewoman, No. 1. Monthly, price 6d.

This has evidently grown out of "The Children's Salon," the well-known corner usually devoted to the younger fair sex in the *Gentlewoman* weekly. Bright, readable, and well illustrated, it bids fair to become a great success, and it has our heartiest good wishes. Some of the illustrations are from photographs taken by members of the "Salon," and they show evidence of careful work and good artistic taste on the part of the competitors.

Exhibitions.

SOCIETY.	ENTRIES CLOSE.	OPENS.	CLOSES	ADDRESS OF SECRETARY.
Camera Club	—	Oct. 17	Dec. 8	G. Davison, The Camera Club, Charing Cross Road, W.C.
Hackney Photo. Soc. ...	Oct. 29	Nov. 15	Nov. 17	W. Fenton Jones, King Edward Road, Hackney
Brixton	—	Nov. 17	Nov. 19	F. W. Levett, 74, Geneva Road, Brixton.
Stanley Show...	Nov. 5	Nov. 18	Nov. 26	H. Smith, 29, Finsbury Pavement, E.C.
South London	—	Nov. 24	Nov. 26	Chas. H. Oakden, 51, Melbourne Grove, E. Dulwich
Exeter Amateur Photo. Soc.	Nov. 12	Nov. 24	Nov. 26	Rev. J. W Sparshatt, Fairfield House, Alphington Road, Exeter
Tunbridge Wells	Nov. 14	Nov. 23	Nov. 24	J. Chamberlain, 14, Calverley Park Gardens, Tunbridge Wells.
Phot. Soc. India	—	Dec.	—	Calcutta.

THE LEYTONSTONE CAMERA CLUB.

THE first annual exhibition of this club was opened by Lady Brooke on 10th inst. at the Masonic Hall, Leytonstone. The President, Dr. W. Pickett Turner, introduced Lady Brooke in a few well-chosen words, and after the exhibition had been declared open, a vote of thanks to Lady Brooke was unanimously passed, which was suitably acknowledged by Lord Brooke.

The pictures got together are, taking them on the whole, decidedly good. The judges, Rev. F. C. Lambert, Messrs. A. Horsley Hinton and E. J. Wall, were busy the whole afternoon, and we give the awards and some notes on the classes. Class A: Landscape, Seascape, and Architecture (members only)—Silver medal to H. H. Summers for Nos. 27 and 28, two good platinotypes of landscapes; bronze medal to A. E. Bailey for No. 73, an "Interior of Wells Cathedral;" highly commended to No. 42, a fine sea piece, by D. G. Riddick; and commended to No. 4, "Norman Doorway, Kilpeck Church," by A. P. Wire. Class B: Portraits and Figure Studies (members only)—Silver medal, No. 91, "In the Clover Fields," by A. C. Frost; bronze medal, No. 81, "Young Essex," by G. S. Manuell; highly commended, No. 84, "The Arab and his Steed," by H. H. Summers; and commended, to No. 88, "Gipsies," by D. G. Riddick. Class C: Enlargements (members only)—Silver to No. 111, "Bamborough Castle," by D. G. Riddick; bronze to No. 119, "When the Tide has Gone," by A. E. Bailey; highly commended to No. 109, "Young Farmer Giles," by G. S. Manuel; commended, No. 106, "Lord Rothschild's Boathouse," by G. S. Manuel. Class D: Lantern Slides (members only)—Silver to No. 122, a set of six landscapes, by H. H. Summers; bronze to No. 127, by D. G. Riddick; highly commended to No. 125, by Tom Symmons; commended to No. 130, by A. E. Bailey. Class E: Landscapes, Seascapes and Architecture (open)—Silver to No. 217, "On the Marshes, Hackney," by F. J. Clements, a very fine study; bronze, No. 196, "Handel's Organ," by J. H. Gear, an exquisite interior; highly commended, No. 182, "Sunset," by G. W. Ramsay; and commended, No. 192, six technically excellent interiors, by C. H. Oakden. Class F: Portraits and Figure Studies (open)—This class contained only nineteen exhibits, and of these, eight by Mrs. Francis Clarke, Messrs. Austin, Leeson, and Spiller were disqualified as having gained prizes elsewhere; silver medal to No. 231, "A Portrait," by G. H. James, a very good study which deservedly took top; bronze to No. 241, "Aha," by Mrs. S. Francis Clarke; highly commended to No. 229, "Forty Winks;" and commended to No. 228, "At the Well," by P. R. Salmon. Class G: Enlargements (open)—Silver to No. 255, "Fishermen's Cottages," by J. H. Gear; bronze to No. 248, "A Misty Day on the Thames," by A. R. Dresser; highly commended to No. 250, "Corn Flowers," by J. Carpenter; and commended to No. 256, "The Lowing Herd," by J. H. Gear. Class H: Lantern Slides (open)—In this class a set by J. E. Austin were disqualified; silver medal to No. 263, by G. Hankins; bronze to No. 271, flower studies, by J. Carpenter; highly commended to No. 268, architectural, by H. E. Farmer; commended to No. 283, photo-micrographs, by J. Freshwater.

A fine collection of prints by such well-known workers as Karl Greger, Byrne, Horsley Hinton, Alfieri, Winter, etc. Messrs. Elliott and Sons showed their famous wave study, and also some 15 by 12 carbon enlargements from hand-camera shots. The London Stereoscopic Co. have a very good exhibit, but possibly the finest work was an enlargement by a member of the club, Mr. Tom Symmons, an almost faultless sea piece. Webber and Sons showed collotypes, and Waterlow and Sons specimens of various printing processes.

The apparatus includes a fairly comprehensive list. Messrs. W. B. Whittingham and Co., of Gracechurch Street, E.C., have a good show of cameras, lenses, chemicals, and apparatus generally, and some very good examples of printing in Mezzotype, which show that it is suitable for small work. Braine and Sons, Holloway, have some well-made cameras and enlarging and reducing apparatus. Messrs. Platt and Whitte make a special feature of fittings, flash lamps, and lanterns, and stereo slides, etc. Percy Lund and Co. have a complete and varied show of books. A. R. Wormald and Co. make a brave show of Photomnibus cameras and results, and masks and binding strips, and all the requisites for lantern work. An exhibition of microscopes, stereoscopes, and Thaumatropes, etc., was also in the small room, and during the three evenings lecturettes, lantern shows, and musical entertainments were given.

EDINBURGH PHOTOGRAPHIC SOCIETY.

An exhibition was opened in the rooms of the Edinburgh Photographic Socicty in Castle Street on 10th inst., and will remain open for a fortnight. The exhibition is open all day, and is free to the public. As an opening ceremony the members of the society held a smoking concert, at which Mr. Alexander Ayton, the senior Vice-President, was Chairman. Of the pictures which are exhibited there are nearly 200 by members of the society. These are as yet under mottos, waiting to be judged in competitions for prizes. Mr. F. P. Cembrano, jun., has sent four landscape studies, printed in platinum, on rough paper, which have taken first-class awards at exhibitions in London, New York, Amsterdam, and Brussels. Mr. W. Bedford, London, has sent duplicates of three pictures which were exhibited in the Pall Mall exhibition. Mr. George Davison sends twelve landscape pictures of the Emersonian school, about the effects of which there has been much controversy in photographic circles. Mr. Ralph Robinson, London, sends three large pictures—landscapes with figures—which will be useful to the members as studies in composition. Mr. Lyddell Sawyer, Newcastle, sends two large figure composition subjects, which illustrate the charming effects that may be produced by attention to lighting. Mr. F. Sutcliffe, Whitby, sends a series of very beautiful landscape enlargements; and Mr. Adam Distin, Leven, Fifeshire, a few exhibits of composition genre subjects. Of the work of the members the most striking is the large group of the Photographic Convention, by Mr. Ayton, the Chairman.

HACKNEY PHOTOGRAPHIC SOCIETY.

From the hasty glance only which we have been enabled to give to this exhibition, we can heartily congratulate the Exhibition Committee on the show both of apparatus and pictures they have got together.

Mr. Herbert Robinson, in a few well-chosen words, introduced Sir Albert K. Rollitt, M.P., who, in a speech of some length, congratulated the Society on its exhibition and declared the same open. A vote of thanks to Sir A. Rollitt was duly accorded.

The exhibition of apparatus is decidedly good, and taking these in order we find—

Adams and Co., of 81, Aldersgate Street, have an excellent show of their well-known specialities, such as the "Ideal," Club camera in aluminium and brass, Torsioscope, etc. A novelty is the new opaque lantern screen, mounted on roller to wind up and down, and covered with a protcctive cover. Also a new biunial lantern of elegant make and design. Some new colours, both oil and water, for lantern slides. A very neat and striking exhibit is the "Vesta" camera in Russia leather case.

T. and H. Doublet, of 11, Moorgate Street, have a miscellaneous show of lanterns, masks, lenses, and several well-known specialities for which they are agents, such as Watkin's meter and Tylar's goods.

Grant and Cocks, of Copthall Avenue, E.C, show some electric dark-room lamps of very neat construction with adjustable screens of different colours, accumulators being used instead of batteries, thus saving all mess and trouble.

Hannam and Co., of 25, Soho Square, W., have an excellent show of their well-known artistic mounts. Iliffe and Son have an assortment of photographic literature. Percy Lund and Co., of Memorial Hall, Farringdon Street, E.C., also have a very varied assortment of books of all kinds, and also Brun's glossy colours.

Marion and Co., of 23, Soho Square, have novelties in the shape of the Radial hand-camera in lantern and half-plate sizes. Also a patent rocker actuated by water, the dish being held in position by suckers. The dish, too, is new in that, though glass, the title is on the bottom in raised letters, *e.g.*, Toning, etc. A new hand-camera for twenty-four lantern plates, the "Beaumont," is also well worth attention, the whole striking us as a good thing, and we shall take the opportunity of examining this more critically.

The Paget Prize Plate Company, of Watford, besides their well-known plates, have some real novelties in the shape of printing-out lantern plates and opals, to which we shall recur again.

Messrs. Platt and Witte, of Birkbeck Road, Kingsland, show lanterns, flash-lamps, and camera fittings.

Mr. H. Park, of Station Buildings, Acton Street, Kingsland, has some good and cheap cameras, bamboo stands and fittings.

Mr. T. H. Powell, of 116, Denmark Hill, S.E., shows his compressed developers, toning baths, and the novelty is Amidol in compressed and portable form.

The Platinotype Company, of Southampton Row, W.C., have some very fine specimens of their process, and propose to give demonstrations of the same. They also show some new forms of the Key Camera with new shutters and new prices.

W. Watson and Sons, of 313, High Holborn, E.C., have their well-known Acme camera stands, lenses, and all accessories.

W. Sharman, of Mare Street, Hackney, shows special forms of developers very neatly packed and sundry apparatus.

A. R. Wormald and Co., of Sutton, Surrey, show the Photomnibus and results, lantern masks, binders, spots, a new and useful print-cutting table, etc.

W. Wray, of North Hill, Highgate, has a splendid show of lenses, both in aluminium and brass.

We shall give a brief note on the pictures with the judges' awards, next week, as the same were declared after we go to press for this issue.

Societies' Notes.

THE following are the officers of St. Bartholomew's Hospital Photographic Society for the ensuing year:—President, Dr. Russel, F.R.S.; Vice-Presidents, Dr. V. D. Harris, Dr. Lewis Jones; Hon. Secretaries, D. W. Collings and J. Hussey, St. Bartholomew's Hospital; Additional Committee, W. B. Jones, M.R.C.S., L.R.C.P., S. E. Gill, G. A. C. Calvert.

A PHOTOGRAPHIC society has been formed at Gosport, with the following officers:—President, the Rev. — Matthew; Vice-Presidents, R. E. Froude, T.E. Williams, G. Churcher; Treasurer, W. B. Smith; Hon. Secretary, C. R. Wright (47, High-street, Gosport); Council, H. Fisher, S. Morrish, E. Tucker, R. E. Green, Moss, and Misslebrook. The society will meet at 46, High Street. The subscription is to be 2s. 6d per quarter.

THE formal amalgamation of the Aston Natural History Society and the new Photographic Society took place at Burlington Hall, High Street, Aston, on Thursday evening last. A large number of both sections were present, the chair being taken by J. W. Neville, Esq., President of the Microscopical Society. The future name will be "The Aston Natural History and Photographic Society," the management of which will be entrusted to a general committee, with sub-committees of eight to manage the respective branches. Dr. Hill Norris, M.D., and W. Tylar, Esq., were elected Vice-Presidents, and Mr. W. Wallis Treasurer to general fund. The subscription will be inclusive, and the library open to all members. The communications anent the Natural History Branch should be sent to Mr. Parker, Nursery Road, Aston, while letters, etc., to Photographic Section must be addressed to Fred W. Pilditch, 133, Wills Street, Aston.

THE P. B. A.—We hear that Mr. Hollyer's benefit day on Saturday last realised the handsome sum of £21 12s. 6d. for the funds of the Benevolent.

THE Exhibition in Pall Mall, which closed on Thursday last, may be considered as the most successful the Society has ever held. The number of visitors to the gallery from September 24th to last Thursday night reached a total of 10,361; the lantern evenings especially showing a very decided increase. On Wednesday the last lantern display brought over 300 visitors together, and the very fine slides shown by Capt. Abney, Mr. F. P. Cembrano, junr., and Mr. B. Gay Wilkinson, junr., were much appreciated. Amongst others, the President exhibited a slide of a flying bullet, by Prof. Mach, the different features of which he pointed out. One by Mr. Cembrano, showing a very extraordinary combination, brought about by the same plate having accidentally received two exposures, and Mr. Wilkinson's "Sunset Calm," were received with enthusiastic applause.

THE South London Photographic Society will hold their annual exhibition and competition on the 24th, 25th, and 26th November, at the Peckham Public Hall, Peckham, S.E. There are eight classes—six members' and two open to members of South Metropolitan photographic societies. Silver and bronze medals are offered in each of the latter. Messrs. F. P. Cembrano, jun., A. Pringle, and A. Horsley Hinton have consented to act as judges. A large number of entries are expected. The latest novelties and appliances in photographic apparatus will be exhibited by Messrs. Adams, Burr, Henry Crouch, Ltd., Dollond, Howell and Son, Percy Lund and Co., Moody and Cottams, Noakes, Photographic Artists' Supply Stores, Powell, Rice Slater, Wormald, and others. Demonstrations will be given at intervals of the working of photographic processes by the Platino-, type Company and others. Lantern displays and instrumental music each evening. On Saturday at 8 p.m. a concert by talented artistes will be given, followed by Mr. H. G. Banks's popular lantern entertainment, "A Tour in the Channel Islands," and a series of dioramic effects by the triple lantern by Mr. Leonard Greaves. Particulars of spaces for exhibit can be had on application to the Hon. Secretary, Chas. H. Oakden, 51, Melbourne Grove, East Dulwich, S.E.

THE following are some of the fixtures and exhibitors of the Stanley Show:—*Lantern Entertainments*—Saturday, 19th, 3.30, "Racing and Cycling Celebrities," by G. Lacy Hillier. Tuesday, 22nd, 7.30, "The Evolution of the Cycle," by G. Lacy Hillier; "Snap Shots," by Lewis Medland and Austin C. Edwards, Dr. W. B. Richardson in the chair. Thursday, 24th, 5.30, "Ditton to Ripley in Thirty Minutes," by G. Lacy Hillier; 8, "The Great North Road and the Record Country," by F. Bidlake. Saturday, 26th, 3.30, "The Southern Counties Cycling Camp;" "The Use of the Hand-Camera," by Conrad Beck; 8, Stanley Photo Competition Lantern Slides, Photography Cyclist Slides. *Exhibitors*—W. J. Anckorn, J. E. Austin, E. Benson, T. M. Brownrigg, F. Boissonas, J. Carpenter, S. F. Clarke, L.D.S., C. Court Cole, A. R. Dresser, F. Downer, T. E. Freshwater, F.R.M.S., A. W. Gottlieb, J. A. Hodges, E. G. Lee, H. R. Leech, Lewis Medland, Viscount Maitland, Robert Terras, Warneuke, Walter D. Welford, Mrs. Jeanie Welford.

Societies' Meetings.

Accrington.—The first annual general meeting was held on the 7th inst., and was well attended, Mr. Cheney presiding. During the time the society has been in existence, ten monthly meetings and four Saturday afternoon excursions have taken place, and these have been well attended and much appreciated. The financial position of the society, though not of the best, is fairly satisfactory, considering the number of members and the short experience of the officers. There are a few items of expenditure in the balance-sheet which might have been reduced, or almost avoided entirely under similar circumstances in the future. The officers for 1893 session were elected as follows:—President, Dr. Clayton; Vice-Presidents, Mr. Jos. Barnes and Mr. J. Cheney, Dr. Geddis, Rev. J. R. Rendell, and Mr. T. Stanley; Council, Messrs. F. Bradshaw, Wm. Clayton, W. J. Clayton, J. Oldham, and B. T. Westwell; Hon. Treasurer, Mr. John Hanson; Hon. Secretary, Mr. Isaac Hanson. It was also announced that arrangements are being made for demonstrations of the most modern and popular photographic processes, and the loan of prize lantern slides and pictures has already been secured for the winter months, and an exhibition of members' work is in contemplation. The society is endeavouring to establish suitable permanent headquarters, with a well-appointed dark-room and enlarging lantern for the use of members at any time. After the business of the evening the President and Mr. Barnes gave an exhibition of local views by the aid of the optical lantern, and these were very much admired, particularly the slide representing the recent shipwreck at Blackpool.

Ashton-under-Lyne.—At the ordinary weekly meeting on the 10th inst., the President (Dr. A. Hamilton) in the chair, a lecture was delivered by Mr. J. L. Lees (Dukinfield) entitled "A Visit to the Riviera." The lecturer exhibited about 160 slides descriptive of a tour made by himself and two friends in August 1891, through France, calling at Avignon, Amiens, and on to Marseilles, then along the Mediterranean coast, stopping at Cannes and Nice, thence travelling to Monte Carlo. The lecturer here exhibited many views of the interior and exterior of this great gambling place and of the surrounding district. The party having obtained special permission to photograph the interior, Mr. Lees showed a diagram of the tables and explained the methods of play adopted for gambling at Monte Carlo. From here the party went to Mentone, Genoa, Milan, Lake Como, and other towns in Italy. The slides were very good and proved enjoyable to the members present. The Rev. Thomas Green, in moving a vote of thanks, said he only came to the rooms to spend ten minutes, but he was so pleased with the lecture and slides that he stayed the whole evening. Although many long years had elapsed since he visited the places, the pictures thrown on the screen brought back to his mind bygone pleasures. Mr. Greenwood seconded the motion.

Belfast (Y.M.C.A.).—The monthly meeting was held on 7th inst., Mr. J. E. Pim, in the unavoidable absence of the President, occupying the chair. There was a large attendance, which included several new members. The prints and lantern slides in monthly competition were passed round for inspection, the awards falling to J. A. Pollock, first, a fine whole-plate yachting study; A. George, second, a good half-plate river scene; J. McCleery, third, yachting at Bangor. In slides, J. McCleery first, W. H. McCleery second, and J. A. Pollock third. Mr. Pollock afterwards proceeded with his "Notes on Enlarging," describing his method of enlarging by daylight very fully, by the aid of a darkened room and the ordinary camera, the negative being placed in a frame (of which there were certain sizes to suit different negatives), at an opening in the window, through which the light was projected by means of a sheet of opal glass placed at an angle of 45 deg. outside. A series of beautiful enlargements, 24 by 19, were then shown to the meeting, and were greatly admired, an exposure of three minutes having been given (from whole-plate negative), using stop *f*/16; an exposed sheet of slow Ilford bromide was then developed, and successfully finished; an enlargement from same negative was then made by the club's limelight apparatus. An adjournment was then made to the large hall of the association, where the competition and other slides were shown on the screen.

Blackburn and District.—First lantern night of the season, Nov. 10th, where eighty slides of the Holy Land and forty of Balmoral by G. W. Wilson, were shown by S. J. Mitchell. The Holy Land slides were more interesting than beautiful, but some of the Balmoral

ones were very fine, the interior views of the Castle especially. A few slides by members were afterwards put through, including some snap-shots of local bits taken in the "Facile," both the negatives and slides being developed with Amidol.

Bolton.—The general monthly meeting was held on the 9th inst., Mr. William Banks in the chair. After the usual formal business of the society had been transacted, Mr. S. G. Buchanan Wollaston gave a lecture on the powers of the Platinotype Co.'s new paper for cold development, illustrated with a practical demonstration of the various methods of modifying the developer, and showing how completely the image could be held in control.

Bristol and West of England.—On 11th inst., the usual club business having been transacted, Mr. J. J. Hill put through the lantern his slides illustrating his holiday trip to Norway. They were very interesting and of good tone. Mr. Frederick Ashman was elected a member.

Burslem.—Monthly meeting held on 11th inst., Mr. E. B. Wain (President) in the chair, and a good attendance of members. The President exhibited a simple apparatus of his own construction for making lantern-slides by reduction, giving a full description of its construction, which could be done at a cost of two or three shillings by any carpenter, and demonstrated its working by making a slide with it. Details of apparatus will appear in our next issue. At the conclusion of the demonstration, the lantern was started, and a number of slides made by the members were passed through first. Afterwards about 150 slides kindly lent by the Editor of the AMATEUR PHOTOGRAPHER were shown, and greatly enjoyed by all present; most of them were criticised, and their faults (if any) noted; on the other hand, many afforded considerable instruction to slide makers.

Cornish (Camera Club).—Meeting on 7th inst. A large number of prints on Eastman and Ilford gelatino-chloride paper were toned. The members find that these papers do not tone so evenly as the old albumenised papers.

Darlington.—The usual meeting of the Photographic Society was held on 7th inst. Mr. Howlett presided. The Secretary read the annual report, which showed the society to be maintaining its position very well. The balance-sheet showed a small deficit caused chiefly by the expenses of the late exhibition. The following officers were elected for the year:—President, Rev. C. G. Davis; Vice-President, Mr. W. G. Brewis; Treasurer, Mr. A. Sanders; Hon. Secretary, Mr. Walter Hildreth, Coniscliffe Road; Council, Messrs. W. F. K. Stock, T. Howlett, L. W. Williamson, and James Robinson. Mr. Howlett, in the course of some remarks, said he hoped members would induce beginners to join the society, in which the older members would be only too glad to help them through their difficulties, and give them the benefit of their experience.

Durham.—A well attended meeting was held on 11th inst., Vice-President Councillor E. White in the chair. Mr. W. Wilkinson, photographer, Durham, gave an interesting and instructive demonstration on "Enlarging." The prize hand-camera prints of a contemporary were also on exhibition, and were pronounced to be superior to the 1891 prints.

East London.—Ordinary meeting 8th inst.; the chair was occupied by the President, Mr. G. S. Pasco. There was a good attendance of members. The subject of the evening was a demonstration on "Carbon," by Mr. C. Tylee. Mr. Tylee detailed and fully illustrated the single transfer process, which he recommended for beginners, in the first place he stated the plant recommended by books ofttimes deterred amateurs from entering into this process. The plant used for the demonstration was of a make up description consisting of the following:—Three enamelled iron baking dishes, one chopping board covered with blotting paper as a squeegee board; an ordinary spirit lamp with stand, and a sixpenny thermometer; the actinometer used was of the cheapest type, costing 2s. 6d., and answered the purpose of the most expensive plant. The demonstration was most successful and highly appreciated. During the evening a hearty vote of thanks was accorded Messrs. E. J. Wall and R. Horsley Hinton, for kindly acting as adjudicators in the recent exhibition.

Edinburgh (View Finders' Club).—The second meeting of the session was held on 14th inst., Dr. Drinkwater in the chair. After some discussion the rule regarding the presentation by each member of twenty prints was rescinded. After some other formal business, Dr. Drinkwater exhibited a number of prints on rough drawing paper for criticism. The convener intimated that there were three vacancies in the club.

Fairfield.—The ordinary monthly meeting was held on 8th inst., when the President, Mr. J. L. Mackrell, occupied the chair, and after the usual business had been transacted, he announced the forthcoming annual competition, the prizes for which are the club's silver medal and clasp and three bronze medals. After this announcement Mr. W. J. Sutherland was called on and proceeded with his demonstration on "Kallitype," in which he treated the subject fully, developing several fine prints and fixing same. The simplicity of the process and the ease and uniformity with which he worked were ample proof both of his ability and of the capabilities of the process.

Glasgow (Phot. Assoc.)—The opening meeting of the session was held on 3rd inst., Mr. Wm. Lang, jun., F.C.S., President, in the chair. Messrs. A. B. Fulton and James McGlashan were elected members, and the office-bearers for session 1892-93 were appointed. Mr. J. Craig Annan, Vice-President, read a paper, "Progress of Photography, a Critical Inquiry." A discussion followed. Proceedings terminated with an exhibition of lantern slides.

Hackney.—Meeting held 8th inst, Mr. A. Barker in the chair. Mr. Riley and Mr. Gildersleve were nominated for membership. The Hon. Sec. announced that Sir Charles Russell (Attorney-General) had consented to come to support Sir Albert Rollitt at the opening of the exhibition. Mr. W. Smith showed Tylar's new form of lantern-slide carrier (which was afterwards successfully worked in the lantern) and lantern-slide printing-frame. A question was asked as to why a reduced slide showed unevenly and dark in centre. The Hon. Sec. said if artificial light was used, probably it was caused through the light being held too near to the negative. Mr. Smith asked whether opal was better than ground-glass for this work. Mr. Beckett observed that it stopped the light somewhat more, but the illumination was better. Mr. Nunn showed a photographic accessory. Lantern-slides were then shown by Messrs. Hawkins, Beckett, Moore, Dear, Gosling, Hutson, Nunn, Carpenter, Roofe, Sodeau and Pollard. The Hon. Secretary worked the lantern. The Hon. Sec. announced that the next ordinary meeting would be on the 22nd, when the Autotype Co. have promised a demonstration.

Halifax.—On the 11th inst. a practical demonstration on "The Wet Plate Process" was given before the members, by Mr. T. Illingworth, photographer, Vice-President of the club. There was only a moderate attendance, but the demonstration, which was both interesting and instructive, was highly appreciated by all present. A hearty vote of thanks was accorded to Mr. Illingworth at the close. The President, Mr. J. Ingham Learoyd, occupied the chair.

Kendal.—The monthly meeting was held on the 9th inst. A large number of very interesting slides were passed through the lantern, being the prize sets of the Fifth Annual AMATEUR PHOTOGRAPHER Lantern Slide Competition. Among those specially admired were some Californian sea pieces and sunset cloud effects, the work of Mr. Post, of New York. Mrs. Francis Clarke's figure sketches and portraits were, as, usual, a prominent feature; and a set of street studies in Newcastle were particularly interesting as having been taken with a home-made hand-camera.

Leeds (Y.M.C.A).—The fortnigbtly meeting took place on tbe 4th inst. The evening was devoted to an exhibition of members' lantern-slides. A large number of slides, including most of Yorksbire and the local spots of beauty, and a very interesting collection of nearly fifty Norwegian views were thrown upon the screen, the latter being tbe work of one of tbe members. The following members contributed slides:—Messrs. Willey, Noble, Slade, Eastwood, and Pallister.

Leicester.—A meeting was held on 9tb inst., the President, Mr. F. G. Pierpoint, in the chair. Minutes of last meeting read and confirmed; five members proposed for ballot at next meeting. Mr. Thos. Scottow, of the Derby Society, then proceeded to give a demonstration of the cold-bath platinotype process, prefacing his demonstration with a lucid description of the various processes. The demonstration was perfectly successful and exceedingly interesting and useful, the principle of retarding development locally by the use of glycerine applied to the part desired to be retarded was very markedly demonstrated, and the whole was of a practical and exceedingly acceptable character. After the demonstration, the President, Mr. Pierpoint, read a paper entitled "A Tour through the Dukeries," illustrated with some well-executed slides. The Hon. Secretary presided at the lantern, assisted by Mr. G. Spell, and the exhibition was much enjoyed by the company of members, and those lady friends who were specially invited on this occasion.

Leigh.—The fortnightly meeting was held on 10th inst. Mr. J. H. Stephen presided. A demonstration on lantern-slide making was held, there being a large attendance of ladies and gentlemen. Mr. Crouchley exposed by contact, and developed with Amidol. Mr. A. R. Moore exposed with a Griffiths lantern-slide making camera, and developed with pyro-ammonia. Mr. W. Hampson exposed with the use of two cameras, and developed with hydroquinone. The demonstration was much enjoyed. The society have now over forty members, and has a promising future.

Liverpool (A. P. A.).—On 10th inst. Mr. C. F. Budenberg, of the firm of Schaeffer and Budenberg, Manchester, gave a most interesting lecture before the society upon the subject of "High Pressure Gas Gauges," illustrated by experiments with apparatus, which the lecturer brought for the purpose. Mr. Budenberg explained that there was no occasion for the least risk of danger in the use of a gauge, so long as the user took care to ascertain that he got a well-made article. He stated that while inferior gauge tubes were made

out of ordinary drawn steel tubing roughly finished, the reliable instruments were made from pressed octagonal steel bars, bored and afterwards carefully turned and polished inside and out. By fixing one of each kind of instrument upon a pressure pump, he showed that the first was strained and rendered unreliable by being submitted to the ordinary pressure, and would easily have burst if the pressure had been slightly increased, but the second, after a pressure of several tons, returned to its original position without showing a fraction of displacement. Mr. Budenberg then referred to chemical explosions which had been caused by turning the full force of oxygen into a gauge in which traces of oil remained. The intense heat generated by the sudden rush of gas rapidly consumed the oil, and an explosion was the result. This action was shown by placing a piece of wood in a brass tube which was attached to a cylinder charged with air. When the valve was suddenly opened the rush of air ignited the wood. The best gauges, the lecturer explained, were now made with a check to prevent this sudden inrush of gas, so that even if they were charged with inflammable oil an explosion could not result. His firm, however, did not allow oil to touch their gas gauges. Mr. Budenberg strongly deprecated complicated connections with cylinders, his opinion being that the connection between the cylinder and the regulator should be as short and as simple as possible.

Leytonstone.—Mr. A. T. Cufley lectured on the 5th inst. upon lenses, before a large attendance of members of the Camera Club at the Assembly Rooms. Within about 1½ hours Mr. Cufley succeeded in condensing an astonishing amount of interesting and instructive information, illustrating some of his points upon the blackboard. A particularly animated discussion followed the essay, certain *data* and conclusions of the lecturer being contested by Mr. A. P. Wire and Dr. Turner. Messrs. Fox, Browne, Wates, Orme, Overton, and others took part in the debate, Mr. Cuffley replying at considerable length.

Louth and District.—A well-attended meeting met on the 8th inst., Mr. W. G. Smyth (President) in the chair, to hear and discuss a most interesting and instructive paper by the Rev. J. M. Coates, of Welton-le-Wold, on "What is a Perfect Negative?" The lecturer approached his subject from the strictly scientific side, taking for the foundation of his arguments the theories and discoveries of Messrs. Hurter and Driffield. Although to the younger members especially the subject was one beset with many difficulties, the salient points of the lecture were clearly and forcibly brought home to all present. The lecturer had prepared a set of very instructive diagrams, which were passed through the optical lantern by Mr. Clarke, and which added much to the interest of the proceedings.

Liverpool (Camera Club).—The usual meeting was held on the 9th inst., Mr. James Hawkins occupying the chair. The subject for the evening was a paper by Mr. W. Tansley on "The Lantern for Home Use." Mr. Tansley, in his opening remarks, stated that he thought all amateurs ought to possess a lantern, and he proceeded to describe as the cheapest and simplest for home use, an ordinary oil lantern. In order to more fully demonstrate, the lecturer brought a four-wick oil lantern, the working of which he full described, and which proved very interesting to the members. Mr. Tansley afterwards passed through the lantern a number of slides brought by members.

Manchester (A. P. A.)—The regular meeting was held on the 8th inst.; the President, Mr. J. W. Wade, occupied the chair. It had been announced by circular that members were requested to produce lantern slides for criticism. Some 400 slides had been submitted to a committee, and their report on each picture was read by the President as it appeared upon the screen. Each set of slides was introduced by the *nom de plume* of the sender, so that anything personal was entirely avoided. Some of the slides were the work of beginners and call for no special remark. Others were evidently the work of past masters in the art; such, for instance, as the set of views from Madeira and Holland, and a set representing the divisions of the day from sunrise to midnight, the latter set being very much admired. The lantern was manipulated by Mr. J. Davenport with his customary dexterity. There was a fair attendance, which consisted of members only.

North Middlesex.—Nov. 14th, Mr. F. W. Cox in the chair. About forty-five members were present. Mr. J. Traill Taylor addressed the society on "Photographic Optics." He said that in preference to giving a lecture he would have a gossip with the members on the various types of photographic lenses. The gossip took the form of an intensely interesting historic account of the different forms of lenses which had from time to time been evolved. Beginning with the simple bi-convex lens used in the camera obscura, he exhibited examples of the various lenses in the chronological order in which they have been produced, the earlier examples having been ground, the crown from window bull's-eye, and the flint from bottoms of tumblers. He explained by aid of the examples and by the blackboard, the effect of the different curves and combinations, and showed that in the earliest examples some of the latest inventions had been forestalled. He showed the telephotic lens and the lenses from an opera glass, with which he had made his experiments in 1868, and the results of which were given in a year-book for 1869, and gave valuable information to those who desired to modify their lenses for emergencies. He pointed out that in constructing a telephotic lens it was necessary that when the image forming lens and the lens of negative focus were laid one on the other the combination should make a diminishing glass. Prints of breaking waves taken with a spectacle lens were shown. Much interest was evinced in the types of lenses, and particularly in the uncorrected meniscus spectacle lens used by Mr. Taylor when he first began photography. Several questions were asked and fully answered, and a vote of thanks to the lecturer carried with acclamation. The remainder of the evening was devoted to making arrangements for the annual exhibition to be held on Monday, the 28th inst. A vote of thanks to the Chairman concluded the business.

Putney.—An ordinary meeting was held on 7th inst., Dr. Sheppard in the chair. Mr. Buchanan Wollaston gave a lecture and demonstration on platinum printing processes. The lecturer stated that the "hot bath" was now practically a thing of the past, being superseded by the new cold-bath process. He claimed for the latter several advantages, among which were superior keeping qualities, greater simplicity of manipulation, and more control over the results. Unlike the hot-bath process a good print could be made from practically any negative; in fact, he had found that by modifying the method of printing, the developer, and its application an excellent result could be obtained from a negative that would not give a passable print by any other process. Mr. Wollaston laid special stress on the absolute necessity of keeping the paper bone dry before, during, and after printing, if full advantage were to be taken of its capabilities to give brilliant results. For this purpose the paper must until development be stored in special boxes containing calcium, care being taken that as soon as the calcium becomes softened by the absorption of moisture it should be taken out and thoroughly dried. In order to keep the paper dry during printing, it is also absolutely necessary to use a vulcanised rubber pad placed in contact with it in the frame; results depend very largely on these precautions being carefully observed, for should the paper have absorbed moisture there will be a corresponding tendency to mealiness, appearance of grain in the shadows, and a general lack of vigour and brilliancy in the print. In the hot-bath process the difficulty of judging the depth of printing was not infrequently found to be a stumbling-block to the beginner, but as the new paper may be printed until full detail is fairly visible, no great difficulty should be experienced in this direction. Mr. Wollaston said that very thin negatives might with advantage be printed under blue, and hard ones under signal-green glass, and that printing generally be done in a bright diffused light by preference. The prints can be developed by immersion, floating, or by brush; the two former require no explanation, but it should be noted that they usually give cold tones; the lecturer evidently prefers to develop by the brush, as by this method he has more command over the development, and thereby obtains a fuller scope for the artistic treatment of the subject. The normal developer consists of oxalate of potash 1lb, dissolved in 54 oz. hot water; for use this should be diluted by adding an equal quantity of water. For brush development the addition of glycerine in the proportion of one part normal oxalate developer (1lb to 54 oz.), one part of glycerine, and two parts of water was recommended. Mr. Wollaston then proceeded to develop prints by the brush method; in order to keep the paper flat it was temporarily mounted on a slab thinly coated with plain glycerine. The developer was then applied by means of a camel-hair brush, which was wetted with fresh developer between each stroke, care being taken that each succeeding stroke should overlap the previous one. Should any part of the print now be seen to require strengthening, a developer without glycerine should be used for the purpose; should it be anticipated from the nature of the negative that any part has been over-printed, detail and transparency in the shadows can be retained by first covering those parts of the print with a thin layer of plain glycerine, rubbed on evenly with the finger, the development being afterwards proceeded with in the usual way. Still further control can be obtained by covering the whole of the paper with plain glycerine previous to development. It will be understood that the glycerine acts as a retarder, much the same as bromide acts in an ordinary developer, and it should also be noted that length of development tends to produce warmth of tone. Should it be desired to vignette the picture, it can be done to any shape in an artistic manner and with great ease by simply omitting to apply the developer to the parts that are desired to remain white, the softening of the edges being done gradually or by cross-hatching in the manner of a crayon drawing; the vignetting may be done after the picture has been printed to the edges. When development has been completed, the prints, without previous washing, are immersed, face downwards, in a bath of dilute *pure* hydrochloric acid (one part to sixty parts of water),

and allowed to remain for five minutes, then removed to a second acid bath for about ten minutes, afterwards to a third for about fifteen minutes. The prints must be finally washed in at least three changes of water for about a quarter of an hour; a pinch of washing soda should be added to the second water; the prints are then dried in the usual manner. During the course of a general discussion which followed the lecture, Mr. Wollaston passed round some beautiful specimens of platinum prints, and also kindly criticised work of a few of the members, some of which clearly showed the evil results caused by dampness. Dr. Sheppard, in proposing a hearty vote of thanks to Mr. Wollaston for his able and very interesting lecture and demonstration, said that after their experience of some other printing processes, what they had seen that evening would be a pleasant revelation to them, and taking into consideration the absolute permanency of the prints, the ease of manipulation, the perfect control under development, they, as serious workers, would give this beautiful process a thorough trial, especially as it also so readily lends itself to individual artistic treatment.

Stockport—The ordinary monthly meeting was held on the 9th inst., the President (Mr. Thos. Kay, J.P.) in the chair. Thirty-two new members were elected, bringing the total membership up to 128. The Secretary then read a report on the recent exhibition, stating that thirty-two members contributed altogether between 500 and 600 prints, etc., and that between 600 and 700 slides were shown during the evenings, and that the profit realised was about £10. The Secretary (Mr. B. S. Harlow) then proceeded to demonstrate the working of the new cold-bath platinotype paper, and was attentively followed by those present.

Stockton.—There was a crowded gathering of the members and friends of this Society on 8th inst., when Mr. Downs gave a highly interesting lecture on a recent trip to Norway, illustrated by fifty lantern-slides and shown by the lime-light lantern manipulated by Messrs. Fothergill and Moult. Afterwards Mr. Ellam, the Hon. Sec., exhibited by the lantern a number of photographic views which he took of the terrible railway catastrophe near Thirsk.

South London.—On 7th inst. ordinary meeting, the President, Mr. F. W. Edwards, in the chair. The prints from negatives on Barnet plates were handed in for competition for the President's award. Mr. E. J. Lester was declared to be the winner with three quarter-plate prints. The remainder of the evening was devoted to the testing of slides previous to their being entered for competition at the annual exhibition. Over 150 were tested.

Todmorden.—On 5th inst. the first exhibition in connection with the above Society was held in the Corporation Hall, and was visited by a large number of people. In the evening a lantern exhibition was given, Messrs. A. and H. Thompson manipulating the lantern kindly lent by Mr. Ormerod, one of the Vice-Presidents. The slides were described by Dr. Measures. There was an audience of about 230, and some of the slides were loudly applauded. The slides and a collection of competition pictures were lent by the Editor of the AMATEUR PHOTOGRAPHER. The chair was occupied by Mr. Ormerod, and the first exhibition proved a successful one.

West London.—11th inst., the President, Mr. J. A. Hodges, in the chair. Five new members were elected. Mr. E. J. Wall read a very interesting paper on "A Comparison of Printing Processes." A long discussion ensued, and many useful hints were picked up by those present.

York.—The lantern season was inaugurated on the 8th inst. by a show of members' slides. The quantity and quality of the exhibit gave promise of a successful session.

SOCIETIES' FIXTURES.

Nov. 17.—WIGAN.—"The Carbon Process," Mr. J. H. Atherton.
" 17.—LONDON AND PROVINCIAL.—Monthly Lantern Night.
" 17.—CAMERA CLUB.—"Backgrounds in Portraiture," Mr. A. Burchett.
" 18.—P. S. IRELAND.—Smoking Concert.
" 18.—HOLBORN.—"Development," Mr. J. Avery.
" 18.—PRESTON.—AMATEUR PHOTOGRAPHER 1892 Prize Slides.
" 18.—LEEDS (Y.M.C.A.)—Exhibition of Members' Work.
" 18.—LEWISHAM.—"Hand-Camera Work," Mr. B. Davidson.
" 18.—CARDIFF.—Disesussion: "Hand-Cameras."
" 18.—GLASGOW (High School).—Lantern Evening.
" 19.—CANTERBURY.—Competition: Photographic Christmas Cards.
" 19.—HULL.—"The Platinotype Process," Mr. S. G. Buchanan-Wollaston.
" 21.—LEEDS.—"Manipulation of the Limelight," Mr. S. A. Warburton.
" 21.—RICHMOND.—"Different Lantern Slide Processes," Mr. Andrew Pringle.
Nov. 21.—CAMERA CLUB.—"Lenses General Principles," Mr. Lyonel Clark.
" 21.—S. LONDON.—"The Pleasures of Photography in the Study and Field," Mr. C. Eldridge.
" 21.—CROYDON.—Lantern Night: Members' Slides.
" 21.—PUTNEY.—"Bromide Enlargement," Eastman Co.
" 22.—HACKNEY.
" 22.—BIRMINGHAM.—"Development," Mr. J. Timkins.
" 22.—WEST LONDON.—"A Discourse on Art," Mr. J. C. Dolman.
" 22.—EAST LONDON.—"The Platinotype Process," Mr. S. G. Buchanan Wollaston.
" 22.—HACKNEY.—"Autotype Process," Demonstration.
" 22.—ALDENHAM INSTITUTE CAMERA CLUB.—Continuation of lecture by Mr. Allan Hair, on "The Human Eye as a Camera Obscura."
" 23.—LIVERPOOL (Y.M.C.A.)—"The Aniline Prining Process," Mr. F. B. Illingworth.
" 23.—STOCKPORT.—"Slides of Switzerland," Mr. G. Hidderley.
" 23.—CROYDON (Micro).—Twenty-third Annual Soirée.
" 23.—THE PHOTO CLUB.—Flash-light Photography.
" 23.—LIVERPOOL (Camera Club).—Ordinary Meeting.
" 24.—HULL.—Paper, Rev. Hay Fea.
" 24.—LOUTH.—AMATEUR PHOTOGRAPHER 1892 Prize Slides.
" 24.—P. S. IRELAND.—"The Platinotype Process," Mr. S. G. Wollaston.
" 24.—LONDON AND PROVINCIAL.—Members' open night.
" 24.—CAMERA CLUB.—"Electricity in the Studio," Mr. Evan W. H. Fyers.
" 25.—HOLBORN.—Lantern Night.

Interesting Discovery in Photography.—Experiments in photography, made by the Duc de Morny in his amateur studio at Levallois-Perret, have led to a useful discovery. He has been able to photographically impress paper of any size or thickness. By this means, a likeness can be fixed like a monogram on note-paper and on railway or other tickets. Eighty different *silhouettes* can be taken in a minute, and at small cost. The Duc de Morny has communicated his discovery to the Minister of War, who intends to utilise it in the "books" carried by soldiers, and in which their descriptions, records of service, and so on are inscribed. The Russian Grand Dukes now in Paris have also decided to adopt the invention in the army of the Czar, and have asked the inventor to send one of his "collaborators" to St. Petersburg.

Photographic Soc., Philadelphia.—A meeting was held on the 12th ult., the President in the chair. Mr. Frederic E. Ives read a paper on the "Helichromoscope," exhibiting the apparatus and also the special camera in which the negative, with the necessary triple image taken through a single lens, were made. Dr. C. L. Mitchell showed a portable divided hand-camera, made by Ross and Co., of London. Mr. Wm. H. Rau gave a demonstration of the process of making bromide enlargements, using the new apparatus belonging to the society, in connection with the Welsbaeh incandescent gas-light. In order to overcome the jarring occasioned by heavy machinery in other parts of the building, it was necessary to construct the apparatus with this end specially in view. The stand supporting the apparatus, with the exception of the condensing lenses, rests upon four springs of pure india-rubber. To counteract any motion which might pass through the springs, weights aggregating about 300 pounds rest on the framework of the stand. A second frame is supported on the top of the stand on another series of six springs, about 100 pounds of iron weights being placed on this frame. The enlarging camera and board for the paper are rigidly attached to the upper frame. By this contrivance the vibration is entirely overoome, perfectly sharp work being done while the machinery is in active operation. A member stated that in photographing in Florida, the Yellowstone Park, and other places where the sky was intensely bright, the skies were almost always overtimed and thin, and asked for a remedy. Dr. Mitchell suggested holding the sky back with a colour-sereen and orthochromatic plates. Mr. Carbutt recommended washing the plate off when the sky had reached the proper intensity in developing, and then with a tuft of cotton or soft brush continuing to apply the developer to the foreground until a harmonious result was obtained. Mr. Ives practised another method, which was to reduce the over-developed portion of the negative with Farmer's solution applied in a similar manner to that recommended by Mr. Carbutt. This he did after fixing, and in daylight, which was quite an advantage. Dr. Mitchell spoke in high terms of some interior views in the Alhambra, taken by Mr. Cembrano, Secretary of the late Photographic Convention, held in Edinburgh. These pictures had the strongest possible contrasts of light and shade, and he understood they had been developed on the plan described by Mr. Carbutt.

A meeting of the Council of the National Association of Professional Protographers, to which all professional photographers were invited, was held in Anderton's Hotel, Fleet Street, E.C., on Nov. 9th. Mr. Thomas Fall was in the chair. The Secretary, Mr. D. J. O'Neill, read the minutes of the annual meeting and of the last Council meeting. The President then said that it was most difficult to fix a time and place for meeting that should suit the convenience of all members, and that though there was such a representative gathering from all parts of the country, he regretted the unavoidable absence of many. Several of those who were unable to attend had written most hopefully and encouragingly. He then dealt with the case of a firm of enlargers who had refused to agree to the Association's terms, *re* prices "for the trade only." Several members strongly expressed their opinion on the subject, and while regretting that the Association did not include practically the whole of the profession, which would enable it to bring such a house to reason, pointed out that there was only one course for the members to adopt, and that even a couple of hundred of the principal men could exert some appreciable influence. Mr. J. Crosby (Rotherham), followed by Mr. J. Hubert (Hackney), strongly urged the necessity of increasing the numerical strength of the Association. Mr. Crosby said that Leeds, Sheffield, and Hull had formed local centres, but that until they had the substantial support of London, solid progress was impossible. The Secretary then read his report of work done since February last, in which time fifty new members had been added to the Association. He reported on the visit paid by the President, Mr. Whitlock, and himself to the Convention, which had resulted in the acquisition of a few members. He had personally canvassed Birmingham, Wolverhampton, Newcastle-on-Tyne, Sunderland, and other towns, and had three times met the executive in London without any expense falling upon the Association. Mr. W. Gill (Colchester) said that one volunteer was worth two pressed men, and that it was possible to do too much in the way of canvassing folks who were unwilling to join. He thought more attention should be turned to making the association of greater practical value, and to making its value more apparent, so that outsiders would not need pressing to come in. Mr. Martin (London) said that the idea of *esprit de corps* should be pressed forward more than mere money or business advantage. Mr. J. Hubert (Hackney), said that though a previous speaker had disparaged personal canvas he thought that a personal application would show the value of the Association to many men who had simply not troubled to consider about it. For his own part, he would canvas his own district, and report results to the next meeting. He urged other members, especially those in London, to do the same, and added that he was sure all the London men worth having would be solid in favour of the Association, if its objects were personally explained to them. If no other London men would undertake the work, he would devote all his spare time to it, and if necessary, continue his labours in evenings and other odd times, until he had worked the whole of London. Mr. H. J. Godbold (Hastings), Mr. Spink (Brighton), and other members promised to canvass their own districts. The President said that so far as he had been able to call upon the men in the West End, his success had been beyond his anticipation. Perhaps the bill of fare presented by the Association had not been so attractive as it might have been. They had thought it well to simply attempt the gathering of a strong body of photographers who should decide the channel in which to direct their practical efforts, rather than to attempt to redress abuses before they knew what strength they had to rely upon. They had done some work in the past, which had been reported from time to time, but now, perhaps, they might offer further advantages. As Mr. Gill had said, they must look to the young men, and to these he would point out out that membership of the Association, which enabled them to seek and to obtain the advice of many of the leading men in the profession, was in itself valuable. He (the President) would have liked to see professionals more generally eager to join the Association, but he was very well satisfied when he considered the character of the membership. They were not a heterogeneous mass, but representative men from all parts of the kingdom, and formed an excellent nucleus for a strong and vigorous organisation. A suggestion had been received from Mr. H. Snowden Ward, who was not a member of the Association, that the Commissioners of the World's Fair Congress on Photography would appreciate the appointment of one or more delegates from the N.A.P.P. It was proposed, seconded, and carried unanimously carried that the President and Messrs. Chas. H. Evans, W. Gill, and W. Battersby be delegates to represent the Association, and to report on the proceedings of the Congress. It was proposed by Mr. W. Gill, seconded by Mr. Bromwich, that the thanks of the Association be tendered to the Manchester *Spy* for its exposures of the doings of a Manchester photographer. The subject was commented on by several members, including the President, who said that though photographers were no better than other men, he thought that the photographers of London would not have suffered such a man to remain amongst them so long as the Manchester brethren had. If the rumour that this man had returned from his flight were true, he hoped that Manchester photographers would not rest until they had made it impossible for such a man to continue in business The vote was unanimously carried. It was proposed by Mr. J. Crosby, seconded by Mr. Glaisby, that the next annual meeting be held in Manchester. The proceedings closed with a vote of thanks to the Chairman, and on the invitation of the Photographic Club, several of the members adjourned to the Club's room to witness demonstrations of the use of Cresco Fylma (by Messrs. Hill Bros.) and of a new safety limelight jet by Mr. R. Beard.

In connection with the Runcorn Brunswick Improvement Society, one of our competitors, Mr. C. A. Timmins, delivered a lecture on the Manchester Ship Canal, illustrated by lantern-slides from his own negatives.

Aldenham Institute.—Usual fortnightly meeting was held on 8th inst., Mr. W. Vere Mingard in the chair. It was decided that the club should compete in the National Lantern Slide Competition. During the evening a set of one hundred selected prints, kindly lent by the Proprietors of the AMATEUR PHOTOGRAPHER, were on view, and greatly admired by all present.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answeting Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5866. **Galway.**—Any information about this town as a photographic centre will oblige. Is there a decent hotel at which ladies could stay? Is the coast scenery wild and rugged? I take it for granted the inland scenery cannot be beaten.—ISOCHROMATIC.

5867. **Enlarging Apparatus.**—Can any reader send me details as to how I can make an enlarging apparatus cheaply to use with artificial light? I have a 5-in. condenser and 10 by 8 Burr lens. I wish to have a flap shutter or some such arrangement. If my lens is unsuitable, what lens should I require?—ALPHA.

5868. **Alpha Paper.**—I have a packet of Ilford Alpha paper with no instructions. Would someone kindly tell me how to print it and tone it?—ROY.

5869. **Springs, etc.**—Where can I get the springs and wooden backs, without bevelled glass fronts, for photograph stands? I want to mount prints behind cleaned spoilt negative glasses, and then set them up in the springs.—E. M.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Oct. 28th.—No. 5849.
Nov. 4th.—Nos. 5850, 5851, 5852, 5854, 5856, 5857.
,, 11th,—Nos 5859, 5860, 5861, 5862, 5863, 5865.

ANSWERS.

5864. **Platinum Toning.**—The following formula will give vigorous black tones on Aristotype or Ilford P.O.P., but if warmer tones wanted dilute with water and stop toning at any desired depth:—

A.

Potash oxalate	2½ oz.
,, phosphate	1½ ,,
Water	25 ,,

B.

Chloro-platinite of potassium ..	60 gr.
Water	2 oz.

For use take three parts of A, one part of B, and two parts water. Fixing bath—1 oz. hypo to 10 oz. water, 10 minutes. Hardening bath—1 oz. alum to 10 oz. water, 10 minutes. This toning bath ie very expeneive, but yields beautiful reeults.—ROBT. HUNTER.

5852. **Lantern Screen.**—Frame of deal, two pieces each, top bar and sides, of 1¾ by 1 for transit. Top bar buttoned centre, iron joint on under side, rising 1 in.; on each outer end of top bar a loop iron of thin 1¾ in. hooping, shoulder down a rounding edge of top half of each side to fit into opening of loop iron. The lower end of top part of sides is cut out upward a long V, and a tin plate, hemmed, is put on over slot; lower part of side bars is cut V pointed, to go up in socket and fitting the slot. Thus the two sides are in four pieces, and top bar doubles together. If screen is large, say 12 ft., then leg pieces are needed, bored to match spaced borings in sides, and may be interchangeable, also adjustably holed for height. Sketch, stamped envelope.—SWAIN, Rothsay Road, Luton.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

W. B. D.—Arc light is of course the best, and the greater the candle power the shorter the exposure. A special incandescent lamp is made for enlarging, and in this the filament is coiled two or three times in a small space, so as to show a small source of light.

GLADYS.—The usual pronunciation is "Nee-epps;" some, however, say "Nee-apes."

R. M. W.—1, 3, 4, 2.

C. Moss.—We have to apologise for the remark, but we must say that both the judges pointed out to us that they thought the print was touched up. If you can improve the final result we hold it to be legitimate to spot, retouch, paint out, paint in, or do anything to the negative, but when it comes to working on the print itself, well, we say that it is unfair and a crime. This is the general impression when a print is for exhibition or competition; when the print is for your own use, why, you pays your money and takes your choice. We shall be very glad to hand you the medal, and think our other compstitors will have to look out in real earnest if you are going on in this way. There are some special bromide retouching pencile in the market which can be used for platinotypes, or you might use Indian ink. We will write you privately.

T. W. Schofield.—In an oil lantern the most important thing is the lamp. The lantern you name, fitted with a Stock's lamp, would give you every satisfaction. See "Our Lantern Screen" in our issue of October 28th.

Emerald.—(1) The greenish stain is said to be due to traces of pyro, but this is not definitely decided. The best thing to do is to soak your negatives in an alum and acid clearing bath, wash well, half dry, and then reduce. (2) The only way to get green negatives is to dip them into a weak solution of aniline green. No plate maker sends out green glass plates: we are afraid the sale would be small, as they would not, as you suggest, prevent halation. (3) The simplest way to tone lantern plates or bromide paper is to dip them into solution of aniline dyes of the required colour. To obtain green images, immerse the well-washed plate or print in the old lead intensifier:

Nitrate of lead		4 parte
Ferridcyanide of potassium	..	6 ,,
Distilled water		100 ,,

Wash well, and immerse in 10 per cent. solution of neutral chromate of potash; wash well, and immerse in 10 per cent. solution of ferric chloride. It is also possible to obtain greenish tones by leaving traces of iron in the film, and dipping into ferrideyanide of potassium.

Punjabi.—(1) Over-toned. (2) Ditto; the light from under the bridge has too much the effect of cutting the print in two. (3) Too much foreground, and not enough sky; over-printed. (4) Over-toned, and has not sufficient interest to warrant wasting a plate on. (5) Over-printed and over-toned; enlarged on rough paper, it would make an effective thing. (6) Over-printed, and too much on left and not enough on right hand. (7) Good of its kind, though it might have been printed deeper and toned more. We do not see much improvement in the last three. What developer are you using?

Cambriensis.—(I.) Over-toned, 1, 2, 3, 4; correctly toned, 5. (II.) We do not think you need invest in a burnisher, the prints you now send are far too much polished. (III.) Wash the aristotype prints for about a quarter of an hour, in five or six changes of water, or until the water is no longer milky. (1) The plate is fogged at the lower portion. (2) The negative ie rather harsh in contrast, which ie heightened by the paper you use; the dress is too black, the collar, etc., far too white. (3) In this the lens has not perfectly covered the plate, or else the camera bellows cut off the top right-hand corner; the camera was not straight; the negative is again too hard. (4) Camera again not straight, corner cut off one end, fogged, and print shows signs of sulphuration. (5) We should prefer this not quite so deeply printed and with less harsh contrasts. Your trees on left are far too black to be true. Considering the short time you have worked, No. 5 shows very good work. We should strongly advise you to give up hydroquinone, or else expose a little longer to reduce your contrasts. If you will let us know exactly how you work, and what the formula you use, we may suggest an improvement.

Four Eyes.—The fault lies in not using distilled water. We have some solution which has been in use and made for over ten days, which is a pale sherry colour, and tones perfectly.

P. B. Broomhall.—We will post medal on to you as soon as ready.

R. W.—We regret that we cannot admit any correspondence on this subject. It is a difficult question, but we cannot cut down more than we do.

Interested.—We thank you for your letter, but cannot insert. We have seen the prints, and were present at the judging, and are quite satisfied as to the order in which they are placed. We fully recognise the difficulty in pleasing all, but the judges do their best.

Self-Help.—Many thanks for your encouraging letter. The print you send is very good technically, but the line of trees in the centre cuts the picture in two. Try and avoid this in the future. It is difficult to say which is the best mount, but provided the tone of the print is not brown, brown mounts would do. We prefer the grey plato-sunk mounts, or else grey cut-outs. Your competition print has gone round the societies; when it returns we will look up and criticise. Try a rough-surface paper for your work.

Lost in the Country.—(1) Camera was not held straight; print fearfully over-printed. (2) Negative strikes us ae being thin; print over-printed, and both this and 1 are hideoue in tone.

Ubique.—The bicarbonates have very poor developing power, which is supposed to be due to the cause you suggest. Our experience in large sizes is the same as yonrs, and we cannot get over the difficulty.

Wintersett.—Yee, equally good results can be obtained on rapid plates as on slow.

J. P. Pemberton.—(1) Print weak, flat and poor; should have been taken in diffused light. (2) A very good thing, spoilt by camera not being straight. (3) Good. (4) Would stand a little more printing. (5) Good. (6) Good; see note to 4.

J. L. L.—We have never seen the lantern referred to, and therefore cannot express an opinion one way or the other.

Stanley Brook.—We should say that platinotype or rough printing-out papers are most effective in the way you mention.

Lux.—See Amateur Photographer, Nov. 11th, p. 343; just what you want.

Platina.—We are afraid you cannot do anything to prevent crack being seen—printing under a screen of tissue paper, with the frame attached to a roasting-jack, hae been recommended. Do not use rapid plates, slow plates are best for enlarging. The exposure can only be found by experiment. Pyro ammonia is the best developer. The print you send ie better, but too weak and washy. Enlargements are not allowed to compete.

Marcus.—Yes, you are at liberty to send in two prints differently toned and mounted.

E. H. Seamer.—Many thanks for print, which is certainly a curiosity. We may be able to uee.

E. Hurman.—We will look into the subject of your letter, and communicate with you.

Ashton.—We must confess we are puzzled at the peculiar appearance exhibited in your negative. We will, if you like, send it on to the plate-makers, and see if they can throw any light on it. Who is it?

B. Hill.—Your print shows sufficient technical merit to warrant us advising you to enter in our competitions. But don't print in the sun, and see that there is absolute contact between the negative and paper during printing.

Arthur Jane.—Letter and fee received. The Studio may be had from our publishers, price 2s. 9d., post free.

Engineer.—(1) A swing front would certainly be an advantage under the stated circumstances, still if all the other movements are there, the swing front may be dispensed with. (2) In a conical bellows camera, the bellows will cut off some of the view. We should advise you to see Stanley's "Engineer" camera, and then Gotz's, which latter answers more nearly to your requirements than any other.

W. E. A.—Mezzotype paper is about the only rough surface printing-out silver paper in the market. Cut-out mounts are most suitable. Hannam and Co.—see advertisement—will supply. The paper is sold in two kinds, rough and extra rough, the former is useful for small work, half-plate and under, and the latter for larger work. You will see article on this paper in the Amateur Photographer for Nov. 4, p. 324.

K. T.—Many thanks for your letter; glad you are pleased. In intensifying with silver nitrate; you can make up the stock solutions, and only mix enough to intensify one plate at a time, as it cannot be used more than once. It is usual to use this intensifier as in the old wet-plate days by flooding the plate with it, and letting it work, not putting into a dish and allowing the negative to soak.

C. R. Beaumont.—(1) It is far more difficult to get good results on bromide paper when exposed to daylight than to gaslight; daylight is too powerful. Your portrait is over-exposed, and ehould have been kept in violent movement so as to soften the vignetting shape. (2) Keep your printing-frame in motion during exposure, and fix outside the mask a sheet of tissue paper. (3) Boil and filter your tap water, and it will be all right.

Telkah.—The articles ran from March 4th to June 24th, 1892, both dates inclusive.

W. F. Pease.—(1) Cut an inch and half off the top; a very good print. (2) Camera not quite straight, and a little too black at the bottom, but a very good print. (3) Good. (6) Camera not straight, and a little too black in the seats. (5) Fair. (4) Wants clouds, and we think a better picture could have been made by looking up the road more. (7) Good. Your work on the whole is good; some of it better than what we get in our competitions.

J. W. K.—The Alpha print is far more pleasing than the other; it only wants clouds to make a decent little picture. Your negative wants intensifying, we should say. The Solio print is flat, weak, and poor; two much foreground, and a horrible pink tone.

A. H. Wood.—Next Portraiture and Figure Study Competition closes on December 19th.

E. H.—Your negative reached us in about two dozen bits. Over-exposure and fogged in developing we should say was the fault, and dust caused the pin-holes.

Sale and Exchange.

RULES.

CHARGE.—Twelve *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* Amateur Photographer, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* Amateur Photographer, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* **2½** *per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* 1s.

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

REPORTING.—*Apparatus may be sent to the* Editor, Amateur Photographer, 1, *Creed Lane, London, E C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.,** *or a commission of* **2½ per cent.,** *upon the sale price of the apparatus.*

Bicycles, Tricycles, etc.—Exchange Safety bicycle, diamond frame, ball bearings all through, ¾ sponge tyres, in good condition, cost £14, for Instantograph camera, leather bellows, double swing back, swing front, reversing back, landscape lens, in good condition.—J. Proctor, 19, Infirmary Street, Blackburn.

Burnisher.—Optimus whole-plate burnisher, cost 36s., accept 24s.—17, Sedan Street, Walworth.

Cameras, etc.—Lancaster's quarter Instantograph three double slides, in case, with focus cloth, new, £3 cost £3 10s.—H. Watts, England's Lane, Gorleston Great Yarmouth.

For sale, whole-plate long-extension bellows studio camera, repeating back, one double slide, price £4 10s.—Photo, Woolhampton, Reading.

Cameras, Lenses, etc.—Chapman's whole-plate camera, Wray's R.R. lens, Thornton-Pickard's instantaneous shutter, complete, perfect condition, £12.—U. Mellor, Royhouse, Bolton.

Quarter camera and lens, cheap, great bargain.—J. Ross, Aldridgehay, Derby.

Dark Slide.—For sale, half-plate double dark slide, good condition, 6s. 6d.—A. E. P., 38, Lawrence Lane, Old Hill.

Hand-Cameras, etc.—For sale, Lancaster's detective camera, takes 12 plates, little used. What offers?—Bradshaw, Bishopstoke, Hants.

Kodak, new, takes pictures 4 by 3½, price £2.—Address, M. D., 1, Hungerford Villas, Long Ditton, Surrey.

Lanterns, etc.—Three-wick magic and enlarging lantern in box, 4 in. condensers, 34 slides in box, 12 ft. sheet, splendid value, 50s.—Biggs, Chemist, Stourbridge.

Hughes' £6 6s. Pamphengos lantern, good as new, Presto dissolver, 9ft. new sheet and 200 best slides, including two lecture sets on Holy Land and Switzerland, sell the lot for £10, great bargain.—G. E. Franklin, Rickmansworth.

Pair oxy-hydrogen lanterne, bronzed tin bodies, 1¾ in. objectives, 4 in. focus, compound condensers (double convex and concave convex), 4 in. diameter, 4 in. focus, blow-through jets, six-way dissolver, and rubber tube, in painted lock-up travelling oase, £5.—Whitehead, 141, Manchester Street, Oldham.

Lantern Slides.—Lantern slides of Yorkshire, Derbyshire, Devonshire, Switzerland, Lake District, 6d. eaoh.—Zero, Stoneleigh, Workington, Cumberland.

Lenses, etc.—No. 4D Dallmeyer lens, perfect, with diffusion arrangement, price £10; will take as part payment Swift's single landscape full-plate lens.—David Boyd, Kilmaurs.

Rapid rectilinear detective lens, equal to new, sell for cash or exchange for portrait lens.—Meadway, Vestry Hall, Bethnal Green.

Lancaster's half-plate Instantograph lens and shutter, specially corrected iris, *f*/10 to *f*/60, perfect, price 15s. 6d.—Hy. Jones, Buckingham House, 155, Cleveland Street, W.

Negatives.—Several whole-plate views (Yorkshire), 21s. per dozen.—Jones, 8, Wheelgate, Malton.

Thirty negatives, quarter-plate, packed in box, suitable for lantern slides, town and country views. What offers?—A. E. Reingpach, Langham Hotel, W.

Sets.—Camera, 7½ by 5, with stand, 8 by 5 Morley's rectilinear lens, three double backs, price £10; maker, Sharp and Hitchmough, Liverpool; depoeit.—T. W. Bateman, offics of this paper, 1, Creed Lane, Ludgate Hill, London.

Camera, Lancaster's half-plate Instantograph, complete with lene, shntter, double dark slide, waterproof leather-bonnd case and tr'pod, in perfect order, scarcely used.—No. 352, office of this paper, 1, Creed Lane, E.C.

Wbat offered for the following lot? Watson's Acme camera, 13 by 18 cm. (7 by 5½), all possible movements, double extension, three double dark slides, turntable, three-fold tripod, stand, instantaneous and time shutter, Ross' whole-plate rapid symmetrical, and a whole-plate wide-angle lens, the lot in splendid condition, cost £21.—Address, Robert Seglio, Mevagissey, Cornwall.

Lancaster's 1892 special brass-bound Instantograph, quarter-plate, with double slide, lens, iris stops, instantaneous shutter, pneumatic release, folding stand, and fonr printing frames, new September last, 40s.; no offers.—E. B., 130, Jamaica Road, S.E.

Lancaster's half-plate camera, lens, two double slides, and tripod, 50s.—Deacon, Mostyn Street, Llandndno.

Lancaster's quarter-plate Inetantograpb, including camera, lens, iris stops, two double slides, tripod in leather case, bag for cameta, perfect, 40s.; also quarter-plate set by Watson, camera, lens, one double slide, strong tripod, complete with box for camera, in good condition except slide, price £20.—S. Williams, Secretary L.E.C.C.C., 38, Silver Street, Leicester.

Quarter-plate set, camera, three backs, rectilinear lens, four-fold tripod, case, £4, cost £8.—17, Sedan Street, Walworth.

Lancaster's Le Merveilleux camera, lens, stand, and dark elide, 7s. 6d., good order; Lancaster's quarter-plate W.A. Rectigraph lens, cost 30s., sell 17s. 6d.; cabinet portrait lens, 15s.; whole-plate rollholder, £1; whole-plate R.R. lens, £2, witb Waterhouse stops and cap complete, good lens.—G. E. Franklin, Rickmansworth.

Lancaster's balf-plate girder tripod, original price 15s., sell for 7s.; Optimus rapid rectilinear 7 by 5 lens, and shutter, excellent definition, £2 2s.; quarter-plate camera, lens, slide, and tripod, 17s. 6d.—Jackson, Hardman Lane, Failsworth, Manchester.

Underwood's quarter-plate Convention camera, 3 double backs, rectilinear lens, iris diaphragm, 4-fold stand, quite new, only used once, £4 18s., cost £5 12s.—W. Clare, Malvern Wells.

Sundries.—Violin, beautiful barmonious tone, in fine preservation, suit lady or professional, very handsome model, excellent silver-mounted bow and first-class baize-lined lock-up case, accept 16s. 6d. the lot, bargain; 20s. worth of good music given in gratis; absolntely certain to give satisfaction; approval willingly; references given if required.—Mrs. Graham, College Buildings, Ipswich.

For sale, first 13 vols. of AMATEUR PHOTOGRAPHER, ten bound, also first ten holiday numbers, the lot £3.—C. P., 24, Hazlitt Road, West Kensington.

I will post AMATEUR PHOTOGRAPHER on Mondays in exchange for another newspaper eame value.—Metcalfe, Biddesden, Andover.

Two new quarter plate Lancaster (Merveilleux) double dark slides, 5s.; also Lancaster's instantaneous lens, iris diaphragm instantaneous sbutter, only 12s. 6d.; No. 1 Rudge cushion Safety, 33lbs., accessories, good condition, £8, cost double.—Thompson, 16, Monastery Road, Liverpool.

Tripod.—Shew's bamboo walking-stick tripod, Universal top, cost 25s, perfectly new, 21s.—Grocott, Garslade, Tarporley.

WANTED.

Cameras, etc.—Wanted, good portable secondhand 12 by 10 camera, all movements, double dark slide; must be cheap and in good condition.—Cpl. Greenham, Depot, Medical Staff Corps, Aldershot.

Gas Cylinder.—Wanted, a best quality gas cylinder, guaranteed, and complete. Send size and price, delivered to Col. Ellison, Prince's Park Terrace, Liverpool.

Hand-Cameras, etc.—Wanted, good 5 by 4 hand-camera with focussing arrangements and latest improvements. — Wattleworth, Dale Street, Ramsey, Isle of Man,

Wanted, hand-camera, with R.R. lens; exchange old violin, bow, and case, or cash.—No. 353, office of this paper, 1, Creed Lane, E C.

Twin, or divided, focussing hand-camera, quarter-plate, no lenses.—Whitehead, 141, Manchester Street, Oldham.

Lenses, etc.—Wanted, wide or mid-angle lens, give maker.—St. John's Parsonage, Ashbourne.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

Special Notice.—Stanley Show, Stand No. 3 (Photographic Section), Agricultural Hall, from Nov. 18th to 26th. To weekly readers of the four following advertisements, and to all whom it may concern. We intend to have the *brightest, biggest,* and *best* show in the exhibition. If you wish to see all the best things in the market, and everything up to date, don't fail to visit our stalls, which cover over 100 feet. City Sale and Exchange, 54, Lime Street, Leadenhall Street, City (late Goy's Medium).

Lanterns! Lanterns!! Lanterns!!! Slides! Slides!! Slides!!! The largest and most varied selection in the whole kingdom. Before selecting elsewhere, call and inspect the stock of the City Sale and Exchange, 54, Lime Street, Leadenhall Street, City, where we bave no hesitation in saying you will find all that you require in this way. Lanterns for sale, lanterns lent on hire, lanterns sold on commission, or taken in exchange for otber apparatus. Write for special supplemental lists, Manager, City Sale and Exchange, as above.

Bargains in Lenses.—Wray's 10 by 8 narrow angle landscape lenses, 15 in., grand definition, iris stops, as new, £2 17s. 6d.; 9 by 7 Optimus rapid eurvscope lens, grand definition, Waterhouse stops, as new, £5 5s.; Ross half-plate rapid symmetrical, as new, Waterhouse stops, £3 17s. 6d.; whole-plate rapid rectilinear by Charterhouse Stores, Waterhouse stops, best condition, 35s.; 7 by 5 Laverne wide-angle rectilinear, grand definition, rotating stops, as new, 22s. 6d.; half-plate landscape and view lens, by Hinton, stand, Waterbouse stops, as new, 15s.; half-plate Lancaster Instantograpb lenses, iris stops, and instantaneous shutter, 15s.; 5 by 4 Optimus rapid rectilinear, by Perken, Son, and Rayment, Waterhouse stops, 27s. 6d.; Swift 5 by 4 wide-angle rectilinear, 5 in. focus, rotating stops, 32s. 6d.; Dallmeyer portrait lens, c.d.v., grand definition, Waterhouse etops, finest order, 63s.; 7 by 5 Optimus rapid rectilinear, Waterhouse stops, as new, 42s. lowest; Quarter-plate hand-camera lens, by Laverne, rapid rectilinear, adjustable focus, 15s., quite new. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Don't fail to visit Stand No. 3, Arcade Gallery, Agricultural Hall, November 18th to 26th, Stanley Show (Photographic Section).

Bargains in Hand Cameras.—5 by 4 Swinden and Earp hand-camera, fitted Laverne rectilinear lenses, adjustable focus, carries twelve 5 by 4 plates, finder, roller shutter, etc., as new, £5 12s. 6d.; Fallowfield's special Facile, covered morocco leather, special rectilinear lens, iris stops, two finders, instantaneous shutter, carries twelve quarter-plates, as new, take £5 10s., cost £8 9s. 6d.; Crouch "Dresser" hand-camera, fitted Crouch eurvscope lens, time and instantaneous shutter, rising and cross fronts, rack focussing, two finders, three double slides, covered morocco, £6 15s.; Rouch hand-camera, quarter-plate rapid rectilinear lens, roller behind shutter, bag cbanging, as new, £3 17s. 6d.; Fallowfield's Facile landscape lens, shutter, finder, etc., carries twelve quarter-plates, 50s.; Luzo hand-camera, by Robinson, rapid rectilinear lens, time and instantaneous shutters, carries 100 films, size ¼ in. leather case, as new, £4 12s.; Chadwick'e band-camera (practical), rectilinear lens, rotating stops, roller blind, shutter, rack focussing, twelve Barnett's patent slides in leather case, as new, £4 4s.; Shew's 5 by 4 Universal hand-camera (folding), leather bellows, adjustable foous, fitted Swift's rapid paragon lens, Waterhouse stops, Thornton-Pickard shutter, three double slides, covered morocco, as new, £6 7s. 6d.; Blair's 5 by 4 band-camera, good lens, time and instantaneous shutter, two finders, rack focussing, three double dark-slides as new, £3 3s.; Optimus Ubiquo band-camera, fitted Optimus R.R. lens, instantaneous sbutter, three double slides, finder, adjustable focussing, £2 17s. 6d.; Kodak No. 1, best R.R. lens, carries 100 filme, best order, in leatber case, 40s.; McKellen'e hand-camera, R.R. lens, shutter, carries 12 quarter-plates, covered leather, as new, 35s.; Fallowfield'e Facile, fitted rapid rectilinear lens, carries twelve quarter-plates, as new, £3 17s. 6d. All above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second hand apparatus bought, sold, or taken in exchange. Inspection invited.

Don't forget to visit the City Sale and Exobange Stand, No. 3, Agricultural Hall, November 18th to 26th (Stanley Show).

Bargains in Cameras and Sets.—Whole-plate outfit, by Parker, Holborn, including camera, finest Spanish mahogany, back and front extension, best leather bellows, all latest improvements, three triple folding double book slides, rapid rectilinear lens by Parker, Waterhouse stops, four-fold ash tripod, a grand lot, brand new, the whole fitting into solid leather case, take £12 12s., cost over £20, warranted in every detail; Whole-plate Rouch patent camera, double extension, reversing back, etc., three double dark-slides, all brass bound made for the tropics, fitted Wray's 10 by 8 narrow-angle lens, iris stops, and solid leatber case, grand lot, £7 7s.; Optimus half-plate Rayment camera, reversing back, and all best movemente, fitted rapid rectilinear lens, iris stops, three douh'e elidee, and three-fold stand, grand set, as new, £7 5s.; half-plate camera, by Houghton, all latest movemente, grand article, fitted three double elidee, rapid rectilinear lens and double folding etand, £6 10e.; quarter-plate Lancaster'e Merveilleux eet complete, 15s.; Lancaster's quarter-plate Instantograph, finest order, all latest improvements, including camera, lens, iris etops, two double slides, stand and case, 37s. 6d.; 5 by 4 best quality camera, by Robinson, Regent Street, leather bellows, rising, falling, and cross front, wide-angle movement, three double slides, fine rapid rectilinear lens, by Robinson; Newman's shutter and Eastman's ¼-plate roll holder, quite new, £5 17s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-band apparatus bought, sold, or taken in exchange. Inspection invited.

Don't fail to visit Stand No. 3, City Sale and Exchange, who will have the brightest, biggest, and best show at the Agricultural Hall, November 18th to 26th.

Magic Lanterns and Slides. — Walter Tyler's Helioscopic is perfection of all lanterns, supplied to Indian Government, School Boards, science classes, clergy, and exhibitors througbout the world. Impossible to have lanterns give better definition or more eatisfactory resnlts; specially constructed lens, which no other lantern possesses.—Walter Tyler, 48, Waterloo Road, London.

Walter Tyler's Best Triples and Biunials are unsurpassed, and perfect in every detail. Good biunials, mahogany bodied, brass fronts, and all improvements, £7 10s.; singlo lantern, witb 4 in. condensers, portrait front lens, 4-wick lamp, complete, in case, 27s. 6d.—Walter Tyler, 48, Waterloo Road, London.

Lantern Lenses.—Spscially constructed. Walter Tyler's new Helioscopic portrait combination lantern lens gives tbe most perfect definition and brilliancy, can be fitted to any lantern, and for excellence cannot be surpassed. No other maker bas this lens, wbich is manufactured expressly for Walter Tyler, 48, Waterloo Road, London.

Regulators and Gauges.—Great reduction, in price. Either can now be had of Walter Tyler for 14s. each. The largest stock of gas cylinders in England. Best seamless steel, tested and valved, and all sizes at very low prices.

Slides from Negatives and Pictures.—Walter Tyler manufactures and colours slides on the premises, thus ensuring speedy delivery, and prices are most moderate.—Walter Tyler, 48, Waterloo Road, London.

Biunial Lanterns.—If you are in want of a really good biunial lantern, perfect in every respect, call and see Walter Tyler's entire brass fronted, mahogany-bodied, lined with Russian iron, and fitted with new best quality lenses, and sold at a most moderate price. The top lantern will take a 4-wick lamp. Tbese are great bargains.—Walter Tyler, 48, Waterloo Road, London.

Hire Department is now perfect. Largest and best collection of slides in the world; over 200,000 always in stock. Temperance, travels, Scripture, educational, comic, tales, etc. Cheaper than any other house, no extra charge for coloured slides or effects. Special terms for large quantities.—Walter Tyler, 48, Waterloo Road, London

Lanterns and Slides.—If you wish to hire, purchase, or exchange, you cannot possibly do better than go to Walter Tyler, who makes this business a specialite, and you will tbus save dealer's and all intermediate profits.—Walter Tyler, 48, Waterloo Road, London.

Second-hand Lanterns and Slides at very moderate prices, also all kinds of apparatus. Send for large catalogue, 420 pages, with instructions for working lanterns of all kinds, and costing an immense sum to produce, sent free for 6 stamps. Small catalogue and seco nd-hand list, post free.—Walter Tyler, 48, Waterloo Road, London.

Bijou Enlarging Lanterns.—Finest results with Hughes's patent rectangular condensers, half the size of ordinary make, superior definition, proper diffusion of light; several whole and half-plate for sale, cbeap.

The Marvellous Pamphengos. — Finest oil-lighted lantern, equals limelight, stood the test of over fourteen years against all imitations, elegant brass fronts, best lenses, from £2 10s. each.

Magic Lanterns, Magic Lanterns.—Largest assortment in the world, cheapest and best, nicely japanned body, 4 in. double condensers, portrait front lenses, rack and pinion, four-wick lamp, in case, £1 7s. 6d.

The Docwra Triple Prize Medal, highest award, supplied to Dr. H. Gurney, Madame Patti, and the Royal Polytechnic.

The Malden Triple; supplied to B. J. Malden, Esq.

Fine Triple Lantern; four set of large diameter lenses, £32, cost £60.

Special Triple; mahogany, brass fronts, £12 12s.

Elegant Mahogany Biunial; brass fronts, £7 10s.; blow-through eafety jets, 11s.; mix gas jet, 15s. 6d.; Malden double dissolving tap, 15s. 6d.; a number of grand effects; partlculars free before purchasing. Send for Mr. Hughes's grandly illustrated catalogue, over 180 fine wood engravings, price 6d.; postage 3d.; separate list of 60,000 elides, price 6d.; postage 3d.; pamphlete free; second-hand liste of bargains.—W. C. HUGHES, Breweter House, Mortimer Road, Kingsland, London, N.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 4, Creed Lane, Ludgate Hill, London, E.C.

No. 425. Vol. XVI.] FRIDAY, NOVEMBER 25, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

Our Views.—Exhibition at Philadelphia, U.S.A.—Stanley Show—Photography not a Sport—Cribbing—Rough Paper Prints—Large Stops and Rough Papers—Camera Club Elementary Lectures—Tele-photographic Lens—Amateur *v.* Professional—Photographs on the Electric Wire—Lantern Slide—Hackney Exhibition.

Exhibitions.—A New Club—S. London, Judges—Brixton and Clapham—Hackney.

Leaders.—Notes on Colour—A Leisure Hour in Winter.

Letters to the Editor.—Meaning of Kodak (Finny)—"Photographs of the Year" (Bennett)—Gelatino-chloride Paper (Woodbury)—New Cold-Bath Platinotype Paper (Humphery)—Amusing the Orphans (Mitchell)—Keeping Platinotype Paper (Emerald)—A Suggestion (Wilkinson).

The Stanley Show.

Articles.—Lantern Slides by Reduction (Wain)—Skies in Lantern Slides (Hodges)—A New Idea—Gelatino-chloride Paper (Enterprise)—New Process of Photo-Dyeing (Villain)—Single Oil Lanterns for Lecture Purposes (Noakes).

Our Lantern Screen.—Our Dissolving Views.

Flashes, by Oxygen.

Monthly Lantern Slide Competition Awards.

Holiday Resorts.—Singleton.

Societies' Notes.

Societies' Meetings.—Aberdeenshire — Aston — Birmingham—Blackheath—Brixton—Cardiff—Carlisle—Croydon (Camera)—Croydon—Derby—Eastbourne—Elizabethan—Hereford—Holborn—Kensington—Oxford—Lewisham—Newcastle—Phot. Soc. of Ireland—Preston—Richmond—Wakefield.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom	Six Months, 5s. 6d.	Twelve Months,	10s. 10d.
Postal Union	" " 6s. 6d.	" "	13s. 0d.
Out of Postal Union	" " 7s. 9d.	" "	15s. 3d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 43.—"Portraiture and Figure Study." Latest day, December 19th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, January 13th, 1893.)

The Sixth Annual Exhibition of Photographs, open to all photographers of the world, under agreement between the Photographic Society of Philadelphia, the Society of Amateur Photographers of New York, and the Boston Camera Club, will be held by the Photographic Society of Philadelphia, April 17th to 29th, 1893. It is hoped that with this early announcement, it may be favoured with liberal exhibits from foreign photographers, to whom special inducements and facilities will be offered. Circulars, with rules and full particulars, will be issued early in December, and may be obtained on application to Robert S. Redfield, Chairman, Exhibition Committee, 1,601, Callowhill Street, Philadelphia, Pennsylvania, U.S.A. Exhibits should be made ready to forward at earliest possible date, as considerable time will necessarily be consumed in transit, etc. They will be required to arrive in Philadelphia probably about March 15th.

The success of the Stanley Show will, no doubt, have amply fulfilled the hopes of its promoters, but how far art has smiled upon the attempts to woo her and induce her to enter its courts will be another matter. We recently commented upon the announcement that there would be a competitive exhibition of *artistic* and technical photographs, and, as we anticipated, the regulations have not apparently found favour with artistic workers, who have consequently refrained from contributing.

If photography is not taken seriously, either as a science or an art, then it is nothing. As a plaything it lacks the essential characteristics of a "sport," and is inadequate as a "game." It must be studied from either the physical or æsthetic standpoint, and is ill-fitted to be associated with cricket, football, cycling, and similar admirable recreations. Of course, an artist or a scientist may, for the sake of exercise, ride a bicycle, but the serious pursuit of his life and his recreation are not to be viewed in the same light. Neither because a cyclist chances to use a camera does it follow, nor does it seem desirable, that an exhibition of "roadsters" and "racers" should be accompanied by an exhibition of pictures, and, unless some very distinct and especial provision be made, the incorporation of art work is likely to be a failure.

That a certain well-known provincial contemporary should think otherwise is perhaps only natural. We shall not be far wrong in saying that he owes his very existence to the cycling world, and is a graft of the original stock which has aforetime borne abundant fruit in cycling litera-

ture, the family likeness to which is observable throughout. Still, there is no harm in this, only it is an insult to the modern development of art photography to suppose that what pleases and appeals to the average "snap-shot" tourist will be acceptable to the serious student.

UNLESS we are mistaken, the executive of the Stanley Show will endeavour to make some different arrangements in future, or abandon the "artistic" altogether.

A CERTAIN artist lately expressed himself rather forcibly upon "cribbing" in connection with "snap shots." We note that the characteristic of certain other "snap-shots" of a literary kind appears to be "cribs," or, to put it more politely, "excerpts" from standard and other writers—from H. P. Robinson to Ally Sloper! With some the scissors is mightier than the pen. Yet quotations from the presiding deity of Shoe Lane seem rather out of place in a photographic periodical. But perchance this sort of thing takes with the descendants of the great Leofric and Peeping Tom.

THE frequent exhibition lately of prints on rough paper, and of a very red colour, is, we think, likely to bring such papers into ill-repute. A very warm colour may be desirable enough at times, but if too often and indiscriminately repeated is likely to become distinctly monotonous; moreover, we are inclined to think that in many cases the reds and so-called Bartolozzi browns are after all subterfuges when the photographer has found himself unable to get the pure brown he desired; hence we hope that our few notes in the present issue on the subject may stimulate investigation towards the improvement and control of colour.

MOREOVER, we can hardly impress upon our readers too strongly the fallacy of using large stops and rough papers, imagining that they will thereby attain to artistic results. Such and similar methods in capable hands may be of untold assistance in overcoming some of the inherent faults of older photographic methods, but if used without the user fully appreciating *why*, or knowing well in just what direction it will help his picture, it is as great an abuse as to place a valuable Stradivarius in the hands of the average itinerant musician. The picture-making possibilities of photography have been abused through excessive sharpness and clearness. Let us hope that the opposite methods are not destined to be similarly cheapened, and the introduction of the serious and devoted few converted into an unintelligent craze.

THE Camera Club officials have graciously and worthily descended from the lofty platform which some have criticised them for occupying, and are offering elementary lectures and demonstrations to beginners, and during the present exhibition days they gallantly play the host to a numerous company of strangers and ladies, so that an afternoon at the Camera Club just now is quite a lively scene. Afternoon tea is in great request, whilst some of the elderly Club *habitues* who are known to value highly the seclusion and quietude of their club quarters may be seen escorting their fair visitors round the little picture gallery, and pointing out the *chef d'œuvres* of the show. The collection will remain open to the public until the first week of December.

A CONTRIBUTOR to the *Times of India* comments favourably upon the results obtained by Mr. Dallmeyer's tele-photographic lens, and is convinced that there is a great future before it for military purposes, especially in Indian mountain warfare, where a "long shot" can often be obtained with perfect safety to the operator. A "long shot," however, in this country on any but perhaps half a dozen days in the year, does not seem to us to promise very favourably for survey purposes, though never such an effective yellow screen for absorbing the blue rays be employed.

WHICH is the plagiarist, the *Photographic Review of Reviews* or *Photography?* Both seem to resent our joining issue in the crusade against the separation of professional and amateur in *open* exhibition classes. But stay, perhaps it is not plagiarism after all, but the same pen writing the Birmingham "I" and the Coventry "we."

ON several occasions it has appeared probable that the wedding of scientific photography to electrical science has in store for coming generations some very astounding results. Professor W. W. Jacques, of the German Technical Society, Boston, speaks with evident conviction of certain experiments in sending photographic impressions over a wire by means of electricity. The description of what took place will be best given in his own words:—"The laboratory consisted of two rooms. In one was an ordinary photographic camera, a small developing closet, and a table on which was a cubical box, having on one side a slit of sufficient size to receive a postal card. From this box two wires stretched across the room, and, passing through the wall, extended to a similar cubical box in the next room. I was given an ordinary postal card and asked to write a short note on it, and wrote, 'Good morning! How do you do?' This my friend photographed by electric light, developed, and dropped the hastily-made negative into the slit in the cubical box in the middle of the room. I went into the adjoining room, and there, issuing from the corresponding box on the table, was a piece of thin paper the size of the card, on which appeared a facsimile of the words I had written: 'Good morning! How do you do?' There would seem no reason, adds Professor Jacques, why the sending and receiving boxes, instead of being in adjoining rooms, should not be placed one in Boston and the other in New York."

THE fascinations of lantern-slide making are likely to be greatly enhanced if the Paget Company's new print-out lantern-slide stands the test of general use, and there seems no reason to doubt that it will. These lantern plates, which we believe are ready for the market, are coated with a gelatino-chloride of silver emulsion, and are intended to be printed by daylight, toned and fixed in just the same manner as gelatino-chloride papers. Then good-bye to the many inconveniencies of dark-room practice if we can make our lantern-slides in the comfort of daylight.

THE Hackney exhibition wound up very successfully. In addition to distributing the medals it devolved upon Captain Abney to present the Hon. Sec., Mr. Fenton Jones, with a very handsome clock, which the members of the society desired to hand Mr. Jones as a testimony of their high appreciation of his indefatigable and painstaking efforts on behalf of the society. It is a mighty fine clock, and Mr. Fenton Jones will no doubt value it on account of the expressions of esteem and admiration which accompany it. He has earned it too—*cela va sans dire*. Then followed some speech-making and votes of thanks. Captain Abney spoke in admirable terms of the society and exhibition. Someone said Captain Abney was a gentleman, though sometimes a sarcastic one. Someone else thought photographic societies a nuisance, which was no doubt meant to be funny but sounded rude. Lantern-slides followed, and it was very late before the doors of the Morley Hall were closed, and the latest of the officers and committee men

wended their way homeward with the consciousness of having won the sincere congratulations of everybody.

South London Exhibition is for this week, Tunbridge Wells follows, then Exeter, to say nothing of minor or "close" exhibitions held by other clubs. Meanwhile, away down in the far west, the Cornish Camera Club are organising a display, and are inviting well-known photographers to send a few pictures on loan "to teach the young ideas to rise," and show those who are at a distance from the great centres what is being done by others.

In our last issue we foreshadowed the birth of an all-embracing photographic institution. The few particulars which were known, we deemed it best to suppress. The *British Journal* the following day, however, is rather more communicative. It says:—

"We are informed that steps are being taken to discuss the advisability of forming in London a central photographic club, to which professional and amateur photographers, the trade, and, indeed, all sections of photographers would be eligible for election. The club would be open during recognised club hours, and many facilities not enjoyed by existing institutions—which it is intended rather to supplement than to rival—would be afforded. The idea is receiving influential support."

Mr. Warnerke is unexpectedly called away to Russia, and Mr. A. Horsley Hinton has consented to fill his place as one of the judges at South London Exhibition.

NOTES ON COLOUR.

V.—THE THREE PRIMARY COLOUR SENSATIONS.

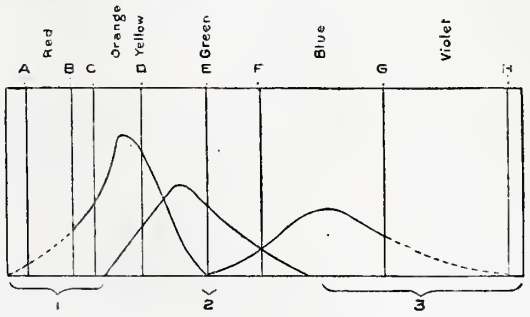
(*Continued from page* 363.)

Up to this point we have seen that the spectrum consists of six colours, and that in consequence of this it might be supposed that the retina was provided with six nerve fibrils or sets of nerves which responded to the action of these six spectrum colours; but as at the same time we can distinguish thousands of tints in the spectrum, it would be also only justifiable on the same ground to suppose that the human retina was provided with as many nerve fibrils as we could perceive tints. Thomas Young suggested another theory which has been powerfully supported by Helmholtz, Maxwell, and other scientists; this theory assumes that each atom of the retina is supplied with three sets of nerve fibrils, which are capable of transmitting three colour-sensations, one set being excited by the long waves of red light, another by the intermediate waves of green light, and the other by the rapid waves of blue or violet. But although each set is excited by its particular kind of wave lengths, each set is sensitive in a less degree to the wave lengths of the other set of nerves. Helmholtz, in his "Physiological Optics," gives the following diagram of the action of these primary colour sensations on the three supposititious sets of nerve fibrils, 1 being the action of red light, 2 that of yellow, and 3 that of violet light, the letters below the diagram representing the colours of the spectrum.

If all three sets of nerve fibrils are simultaneously and equally excited, we receive an impression of white light. Helmholtz says that the choice of these three colours is rather arbitrary, and that any three colours which when mixed together would form white light may be chosen, but there must be two maxima of action, one in the red, the other in the violet. Young's theory of red, green, and violet as the primary colour sensations receives some support from the fact, the most common form of Daltonism, or colour blindness, is to red, whilst a less noticeable or less observed variety is to green rays, and a still rarer variety to purple, though in this last case the presence of red Daltonism would affect the precise estimation of the hue of purple.

If we work synthetically as it were, we shall find still further confirmation of this triad theory.

If we take the spectrum colours left after abstracting the three primary colours, we find, orange-red, red-orange, orange-yellow for one group; yellow, greenish yellow, and yellowish green for the second, and blueish green, greenish blue, and ultramarine blue for the third. Now let us try and form our first group of colours; this may be easily effected by mixing the red and green colour sensations in varying proportions. Supposing we throw a beam of red light on



to a white screen, and allow a shade of green to mix with the same, we then obtain orange-red. Increasing the luminosity of the green, gradually we obtain red-orange and orange-yellow; at this point we have obtained our maximum illumination with green light, and to continue our synthetical experiments further, we must reduce our red, which comes practically to the same thing as increasing our green; we then find we obtain a distinct yellow. On reducing the red still further, we obtain a greenish yellow, and then on still further reduction of the red, a yellowish green. On cutting off our red, or the first primary colour, altogether, we obtain of course the second primary, green. We have thus formed the whole of the spectrum secondary colours up to green, and our third group alone is left, and this may be formed in precisely the same way: by allowing a beam of green light to fall on a screen, and mixing with it violet light, we obtain blueish green, greenish blue and ultramarine blue, according to the mixture of the various proportions of green and violet light.

We have seen, however, that our three primary colour sensations excite not only their own individual set of nerve fibrils, but also in a minor degree the other nerve fibrils; thus the red rays excite not only the nerve fibrils sensitive to red, but in a minor degree the nerves sensitive to green and violet; and a mixture of the three primary colour sensations gives us the sensation of white; therefore the admixture of any two primary colour sensations yields a resultant colour which is less pure than the spectrum colour, because the whole of the nerve fibrils are excited, and we perceive the resultant colour modified by an admixture of white light. Arguing on the same lines, we are never able, under ordinary circumstances, to perceive any individual colour of the spectrum without this admixture of white light, or without the sensation of white light being also excited. As a proof of this, we may by an artifice, so as we cannot remove the green and violet sensitive nerve fibrils, so far put these fibrils out of play as to nullify their action when viewing the red of the spectrum. This artifice is very simple, and really consists of tiring the violet and green sensitive nerve fibrils by looking intently for a short time on an admixture of these colours, such as blueish green, when, if after this we examine the red of the spectrum, we shall note that it glows with increased brilliancy, because the tint is pure, there being no admixture of white light. The same experiment may be performed for green and for violet.

A LEISURE HOUR IN WINTER.

THE most carefully exposed plate will sometimes have certain regions of nearly transparent glass, which print too rapidly and give trouble from first to last. The use of matt varnish, plain or stained yellow, is usually recommended, with which it is suggested the too rapidly printing portions should be painted.

Many will, however, have found that "matt varnish" is by no means easy to manipulate with a brush; either it dries too rapidly to allow of its being applied exactly to the desired spots, or it spreads too far, or if drying slowly it results in an irregular granulated film.

We have found a little "light red" or "chrome yellow" oil colour squeezed from its lead tube and allowed to partially dry, very useful when applied to the back of the negative, using the finger tip as a "dabber" with which it may be softened off at the edges in a very convenient manner. Still, it is not always possible to restrict the "dabbing" and softening to the precise figure of an irregular and sharply defined object, if such occasion should arise; moreover it may require repeated experiments before you will arrive at the right depth of "red" or yellow to restrain the printing of the particular regions to just the right degree. Smoking the back of the negative with smoke from a candle or other source of combustion so as to cover the glass with a thin black film, and then with a cloth to remove it from all parts except where it is required to retard printing, has been recommended, and no doubt has its good points—it would certainly be easily removed—too easily, we should imagine, if a number of prints are to be made from the same negative. We have recently found a small piece of red putty of just about the consistency of a piece of stiff dough exceedingly useful for this purpose, lightly dabbed on to the back or plain-glass side of the negative; a delicate veil can be produced over the thin portions of the negative, which can be increased in thickness by repeated "dabbing." The soft putty, if not too soft, can be rolled into little pencils, and with the edge or point the intricacies of an irregular and complicated outline followed with accuracy.

The reverse process, that of rendering more transparent the denser parts of a negative, is perhaps a more troublesome task, and certainly more likely to be attended with accident to the whole negative. The usual reducing formula of hyposulphite of soda and ferridcyanide of potassium is perhaps the most effective, but when *local* reduction only is attempted too great care cannot be taken. Whatever the object to be reduced may be — sky, or stream of water, a sun bonnet or figure in light draperies—the reducer applied with a brush is sure to spread beyond the exact space to which you would fain restrict it, and even though but little noticeable on the negative when viewed by transmitted light, the error will be startlingly revealed in the print.

Our advice would be to soak the negative in clean water until the film is softened, then remove superfluous water with a squeegee, or allow the negative to drain and partially dry. *Outside* the edge of the object or region to be reduced, draw with extreme care, by means of a camel-hair brush, a line or border of glycerine; the space now enclosed by the border of glycerine may be treated with a weak solution of ferridcyanide of potass. and hypo. of soda, and the result watched—the glycerine should prevent the flowing of the reducer beyond where its action is required. An alternative method would be, omitting the glycerine, to paint the part with plain hypo of soda solution, only keeping this exactly to figure to be reduced, and then subsequently to allow a drop or two of the reducing solution to run into the painted area; by this means the indication of where the brush containing reducing solution has travelled may be avoided, and the edges softened.

In any case the action should be slow, that is to say, the solution should be weak in ferridcyanide, or an unpleasant yellowish-brown stain is likely to arise, the non-actinic character of which will probably more than compensate for the reduction in density.

At the present season many will find some hours of leisure at their disposal which might be turned to excellent account by seeing what can be done to improve some of those negatives which are amongst the less satisfactory of our summer's products. With a little "dodging," reducing, intensifying, spotting, masking, it is often surprising what can be done with an altogether discarded plate. By the way, a pyrogallic-developed negative is very apt to stain under the influence of ferridcyanide of potassium. If before developing a negative we anticipate having to reduce any portion, we use eikonogen, hydroquinone, or similar developing agent—stains don't come with these.

Letters to the Editor.

THE MEANING OF KODAK.

SIR,—It is interesting to note that the word "Codach" in the Iberno-Celtic or old Irish language signifies invention. I was in the Eastman Company's shop in Oxford Street the other day, and I asked if they knew the meaning of the word "Kodak." I was told that they thought it was an "invention" of the maker, or possibly taken from a town in America of a somewhat similar name.—I am, sir, yours, etc.,

W. E. ST. LAWRENCE FINNY, M.B.

* * * *

"PHOTOGRAPHS OF THE YEAR."

SIR,—In answer to Mr. Knight's request in last week's issue, allow me to state the Editor's surmise was, as is usual, right. "In the Pool" is a uranium-toned bromide, and the green colour in which it is reproduced in *Photographs of the Year* suits it admirably, in the opinion of—Yours, etc.,

LIONEL C. BENNETT.

* * * *

GELATINO-CHLORIDE PAPER.

SIR,—In reply to Mr. Gotz's letter in your last issue, this gentleman has evidently misunderstood my meaning. I claim to be the first to introduce the manufacture of gelatino-chloride paper into this country. Previous to this the sale was very limited.—Yours, etc., WALTER E. WOODBURY.

* * * *

THE NEW COLD-BATH PLATINOTYPE.

SIR,—In your very able editorial on "New Cold-Bath Platinotype," your printer has, either by accident or possibly with a view to amuse your readers, so transposed the wording of one of your sentences as to give an impression which I imagine you hardly wish to convey.

The sentence reads as follows:—"If you consider the result is what you desire, lift the *bath* from the board, and plunge it in the acid clearing *print*." The bath could certainly be lifted from the board, if it were considered desirable; but what is an acid print? We have often seen a sweet picture, but the acid print is a puzzle, unless it be a print that is too sharp to the taste of those who C flat, and think it to B natural.—I am, yours, etc.,

ERNEST J. HUMPHERY.

We have to apologise for slip, and tender our thanks for note.—EDITOR.

* * * *

AMUSING THE ORPHANS.

SIR,—May I ask your assistance in providing amusement for our 200 orphans? By publishing this letter you will be helping to bring a plan before the notice of your readers, many of whom would be glad of an opportunity of helping the fatherless little ones.

The Home is situated on the Chobham ridges, nearly three miles from the nearest village. I am anxious to amuse as well as instruct them during the long winter evenings.

Brother amateurs who may have a few lantern slides to spare and will post them to me will be helping to carry out my scheme. Any duplicate negative they may have from which I might make lantern slides would also be very acceptable. I hope that if they have only one to spare they will send it. Each negative or slide should have a label notifying what the subject is.

With the earnest hope that my appeal may be successful, I am, yours, etc., A. MITCHELL, Head Master.

R.A.O.A., Camberley, Surrey.

* * * *

KEEPING PLATINOTYPE PAPER.

SIR,—The following little wrinkle may be of use to some of your readers. I have found it very successful, and have not seen it published:—

Procure a piece of closely-woven linen or fine canvas, cut about one inch broad, and long enough to go round the tin twice; rub well with india-rubber solution on both sides, roll firmly round lid of tin. This strip can be peeled off and put on at any time. If it gets too dry, moisten with a little benzine or naphtha. It is perfectly damp-proof.—Yours, etc.,

EMERALD.

* * * *

A SUGGESTION.

SIR,—Judging from the interest shown in photographic exhibitions, which are now in full swing, I should like to offer the following suggestion, which will no doubt elicit the opinion of several of your readers, especially those connected with societies: "That an annual exhibition should take place, in which every London and suburban society should be represented by one or two members, selected by their society committee, to compe each competitor having his own choice of plates up to a given size, and limited to six, which will be marked for the purpose by the manufacturers. The best set of pictures to receive the highest award, the next best to follow up in succession until, say, the best half-dozen competitors have been selected." Providing this suggestion is supported, I do not think there will be any difficulty in securing the necessary officers and council to consider the arrangement of the scheme. A subscription of 5s. from societies entering for competition, honorary subscriptions, and charge of admission to exhibition would no doubt leave a very handsome sum to be handed over to the Photographers' Benevolent Association. The fact of the first one or two best workers in each society being selected would in itself guarantee the quality of work on exhibition.

I shall have much pleasure in placing 5s. to this scheme, and will guarantee to take tickets to the amount of one guinea if my suggestion is carried out.

If there is no personal gain by this scheme, it will certainly bring unionism amongst societies.—Yours, etc.,

28, Shacklewell Lane, Kingsland, N.E., M. A. WILKINSON.
Nov. 21st, 1892.

The Stanley Show.

ESSENTIALLY a cycling exhibition, the executive have included as a fitting adjunct a photographic section. Photography can but add considerably to the pleasure of all cyclists by allowing them to obtain permanent records of spots they visit, and cycling enables the would-be photographic tourist to reach distant haunts with little expenditure, and with development of muscle and improvement of health.

The exhibition was opened on Friday afternoon by Sir Albert K. Rollit, who after a tour of inspection took the chair at a luncheon, at which success to the Stanley Show was most cordially received.

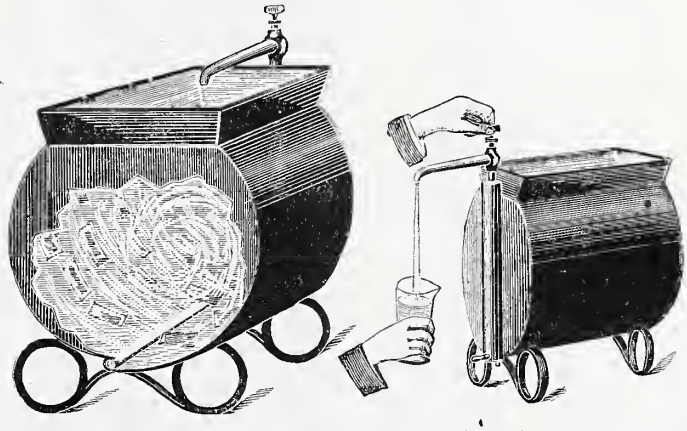
On entering the Agricultural Hall from the main entrance in Upper Street, the visitor desiring to see the photographic section must go up the inclined approach to the main hall, then as soon as this is reached turn to the left, then to the right, take the first staircase on the left, at the top turn to the right, and he will at once see the sign "Photographic Section." Entering this gallery the first exhibit to meet the eye is that of

B. J. EDWARDS AND CO., THE GROVE, HACKNEY. Here we have examples of work on ordinary and isochromatic plates from nature, as well as coloured objects, such as oil paintings, flowers, etc. Particularly noticeable are three landscape prints, showing the effect of the isochromatic plate, and also the over-correction by the use of a screen. Lantern slides and transparencies on Edwards' XL. transparency plates speak well for the beautiful results to be obtained, and when these are lit up at night the attraction to the public is very great. The value of iso plates in the studio is shown by some very fine work by the Stereoscopic Company and Lambert Weston, and the exquisite softness and delicacy of white drapery is particularly noticeable in these last. Mr. Horsley Hinton's fine work, "An Essex Marsh," proves the correct rendering of "tone," both of sky and landscape, for which these plates are specially suitable.

Down a few steps, and

HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, E.C., have a good show of photographic literature, including the AMATEUR PHOTOGRAPHER, "Photographs of the Year," "Amateur Photographer's Annual," "Dictionary of Photography," etc. Free copies of the AMATEUR PHOTOGRAPHER are also to be had for the trouble of helping oneself.

THE SUN CAMERA CO., 40, New Briggate, Leeds, agents for the well-known wholesale firm, Lonsdale Bros., who are noted for their brass work and cameras in parts ready for the amateur photographic mechanic. Another novelty is a focussing chamber which shuts up and protects the ground-glass when not in use, and does away with the necessity of the dark-cloth. A special cheap but well-made line is the 3s. half-plate retouching desk with quarter-plate carrier. The Sun print washer is a convenient and well-made piece of apparatus with water supply entering from the bottom, and a lip arrangement to prevent the full flush from tearing the prints. A tap at the top also enables one to obtain a supply of water for developing, etc., without disconnecting the washer. This firm have also a very good lantern in case, with tripod which fits on to the bottom of case,



which is then opened so that there is no trouble in taking the lantern out, all being ready at once for use. A new single lantern carrier and dissolver of very neat design is well worth attention, as well as a new projection and enlarging apparatus with removable bellows front, and rack and pinion. Lanterns in parts is also another feature to which we refer in "Our Lantern Screen."

THE CITY SALE AND EXCHANGE CO., 54, LIME STREET, E.C., face the AMATEUR PHOTOGRAPHER stall, and really we have a surfeit of good things, and it is by no means easy to pick out anything for special mention. The special feature claimed by this firm are, that any buyer is, on visiting their stall or rooms, in a position to choose from every maker's apparatus in the market. "Optimus," Lancaster, Underwood, Talbot and Eamer, Houghton, Clement and Gilmer, Wray, Ross, Dallmeyer, Taylor, etc., etc., all are here, and these goods may not only be purchased outright, but they may be hired by the day, week, or month, and also obtained on the easy purchase system, or in exchange for old apparatus. The firm's own specialities are a one-solution hydroquinone developer, which we report on next week, a new three-fold rule and bayonet joint stand with adjustable legs, very firm, rigid, and light, and also a new crocodile skin camera case, which forms a really handsome case. Stereoscopes and stereo slides are especially *en evidence*.

Following the sun we find—

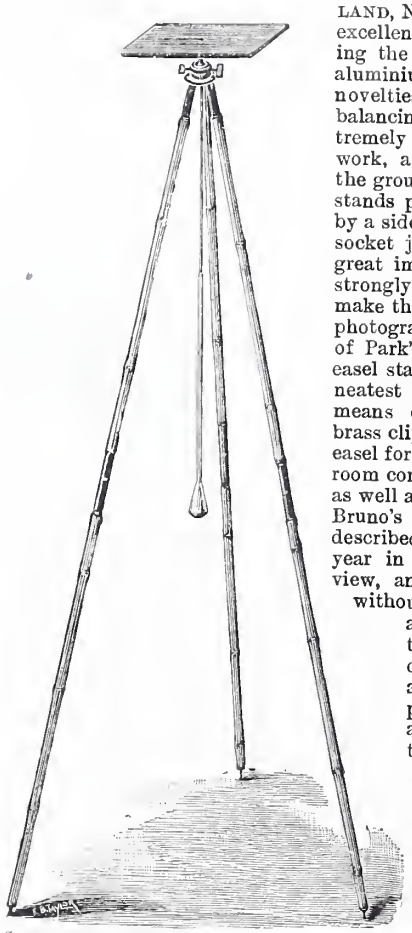
J. DESIRE ENGLAND, 21—24, CHARLES STREET, ROYAL CRESCENT, W., with some excellent examples on celluloid films; his excellent aluminium-mounted film carriers; Turnbull's neat little pocket camera and film slides; lantern slides both on glass and celluloid, and Scanlan's Practical film and film lantern-slide holder; and last but not least, specimens on his well-known photo-mechanical plates.

A. J. SMITH AND CO., 18A, CLOUDESLEY SQUARE, ISLINGTON, N., have an interesting exhibit, as workmen are busy making cameras and slides. One speciality is a new dark-slide lock, the great feature of which is that the fastening closes over the hasp, so that the lock really holds the slide closer to the body, and thus forms a further prevention to light entering; the folds of this slide are

always rabbetted. The A 1 camera, mounted in aluminium, is very light, and weighs in the half-plate size only 2¼ lb. A new stand has also some good practical improvements. The whole of the cameras on this stand are particularly noticeable for the beauty of the grain of the wood, a special feature to which great attention is paid. This firm are also agents for Hockin, Wilson and Co.'s well-known Desideratum lenses, which combine cheapness with quality.

R. and J. BECK, OF 86, CORNHILL, E.C., make a brave show of the "Frena," and results obtained by the same, both in the shape of prints, lantern slides, and some huge enlargements which speak well for the defining powers of the lens. Of the Frena itself we need hardly speak, as we noticed this some weeks back, and a continual use of the same ever since has only confirmed our good opinion. Dishes, printing frames, and a special drying board for the films back up a complete assortment of albums for prints. A very neat little book for the negatives calls for special attention, as well as a Frena developing cabinet, the neatest thing of its style we have yet seen. For cycling a special camera holder has been devised, and we have no hesitation in saying that it is at once practical, safe, and efficient; formed of stout wire, it is very light, and is adjustable both horizontally and vertically—every photo-cyclist should see this. At the back of the stand is a magnificent 24 by 24 stndio camera and stand of colossal and beautiful workmanship. A case of 300 Autograph lenses in brass and aluminium completes an excellent exhibit.

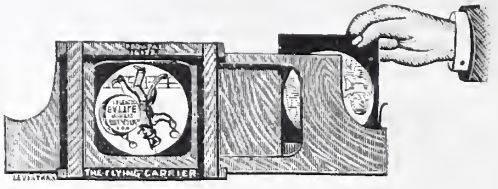
HENRY PARK, OF 1, ORCHARD BUILDINGS, ACTON SREET, KINGSLAND, N., so long known for his excellent camera fittings, is showing the same in brass as well as aluminium. He is offering some novelties in bamboo stands, one, a balancing stand, which is extremely useful for hand-camera work, as, no matter how uneven the ground, the head immediately stands perfectly level, and is fixed by a side screw. A new ball-and-socket joint is worth noting as a great improvement. We can also strongly recommend all ladies to make their friends who go in for photography obtain for them one of Park's new camera, music, and easel stands combined, one of the neatest ideas yet brought out. By means of two little adjustable brass clips the stand serves as an easel for ornamenting a drawing-room corner, or as a music-stand as well as a camera-stand. Major Bruno's Universal hand-camera, described in the early part of this year in our columns, is also on view, and at the price of 45s., without a lens, should be a great favourite. We can testify as to the excellence of the workmanship in it, a feature of no mean importance, and which is so apparent too in the beautiful "Victoria" cameras and the huge studio stand with every possible movement and of extreme rigidity.



W. MILLER AND CO., 122, NEWINGTON BUTTS S.E., show a new hand-camera, the "Unique," which is the usual mahogany box form. The plates are placed in sheaths, film upwards, in the top of the camera, which is constructed to hold 12, 18, or 24 plates; when charged, a rod at the back of the camera is drawn out as far as possible, and the plate is drawn through a quarter of a circle and faces the lens, the pushing back of the lever locking the plate in register. The lens is an R.R., working at *f*/8, *f*/11, and *f*/16. Focussing can be effected by a lever and scale underneath, and either time or instantaneous exposures may be obtained at will. The lens and view-finder are both uncovered by one movement. The camera is well made, simple in movement, and cheap at £5 5s.

W. WRAY AND SON, OF NORTH HILL, HIGHGATE, contribute a good show of lenses in brass and aluminium, and also a new diaphragm shutter of light and elegant design, to which we shall recur again.

MESSRS. MORLEY AND COOPER, 70, UPPER STREET, ISLINGTON, have an excellent assortment of cameras, noticeable amongst which is the Fairy, with aluminium fittings, very light; a new French detective camera, very small and neat, to take six plates; and an enlarging camera, with an adjustable sloping front to correct



drunken architecture; a splendid triunial lantern, which can be made into a biunial or ordinary; and also a flying carrier. A new Fairy stereo camera, with three slides but without lenses, at £7 4s. is cheap.

W. SANDERS, OF 91, MOUNT PLEASANT, LIVERPOOL, shows his "Photoscope" an opera, field, and marine glass, and camera combined, which was also exhibited at Pall Mall. It is just the instrument for a lady.

W. TYLAR, OF HIGH STREET, ASTON, BIRMINGHAM, shows Davenport's new Guinea Dark-room. A neat little metal binding clip will form a series of ladders for prints is a decided novelty, as well as the adjustable washing and draining rack, which takes from lantern size to whole plate. A lantern slide mounting vice, white ink, masks, etc., and the 12s. 6d. Tit Bits camera, with specimens of work, is wedged in with the numerous helpful little odds and ends for which Mr. Tylar has made his name.

SANDS AND HUNTER, 20, CRANBOURNE STREET, W.C., show a neat cyclist's camera and four-fold stand, both extremely light and well made. They also show a new and very light Willesden paper film single holder, the film being slipped under side guides and a brass clip holding it in position at the top. They also show their well-known dry-plate books, about the handiest and safest methods of carrying exposed and unexposed plates yet invented. This firm also make a speciality of second-hand apparatus of all kinds.

PLATT AND WITTE, BIRKBECK ROAD, KINGSLAND, N., exhibit camera fittings and bellows, the former in brass and aluminium; some stands, and also some very good lanterns, and a screen which we notice in "Our Lantern Screen."

A. GRAY, OF 44, SNOW HILL, E.C., shows NAMEIT, the latest improvement in which is the employment of metal-face type, which is inked with a roller, the impression taken on to special transfer paper and then transferred by simple pressure to the negative. The process of titling negatives is by means of this considerably simplified.

ELLIOTT AND SON, OF HIGH BARNET, content themselves with covering acres of wall (this joke isn't original), with their very fine and very well known Wave Study, which gained a medal at Pall Mall, and some first-rate 12 by 10 carbon enlargements from hand-camera shots on Barnet plates, the most noticeable of which are "Welsh Ponies" and "Morning Toilet," the low morning light effect of this being very striking.

THE AUTOTYPE COMPANY, 74, OXFORD STREET, W., show some large and fine specimens of work by the carbon process.

THE PICTURES.

Our notes on the apparatus have run to such a length that our notice of the pictures must be brief. The judges, Messrs. Traill Taylor, Andrew Pringle, and Henry Sturmey, made the following awards:—Class A, instantaneous cycling subjects, set of four: Gold and silver medals withheld; bronze medal to three snap-shots at the Harlequin (Cardiff) Grounds, by W. H. Kithen; diploma of merit to Austin C. Edwards. Class B, instantaneous general subjects, set of four: Gold medal for 21—24, to John H. Gear, all 12 by 10 direct platinotype work of good merit; Mr. Austin C. Edwards takes the silver for 8A, four Niagara shots; bronze medal to No. 30, "Filey," by E. M. Stone; diplomas are awarded to A. R. Dresser, No. 8; 7A, A. S. Statham, and 13, E. Hawkins. In Class C, landscape or seascape, with or without figure: The gold and bronze medals for 111, "Fishing Boats," and 110, "Stalham Dyke," by H. Dudley Arnott; the silver medal to 69, "Nelson, Hastings," by A. R. Dresser; diplomas to 78, "Off to the Plough," by J. E. Austin. Class E, pictures in platinotype, any subject: Gold, 267, "Worn Out," by F. Whaley; silver, 268, "Strensham Church," Harold Baker; bronze, 223, "The Wretched Criminal," C. F. Treble; and diplomas to 224, "Who's 'oo?" by C. F. Treble; 197, "Langdale Pikes," by E. Benson, and W. J. Anckorn. In lantern-slides: Gold to J. Carpenter; silver, J. E. Austin and E. G. Lee; bronze to Austin C. Edwards; diplomas to A. R. Dresser, J. H. Gear, J. O. Grant, and W. Taylor.

Our Lantern Screen

A MONTHLY SUPPLEMENT OF

"The Amateur Photographer."

No. 2. NOVEMBER 25, 1892.

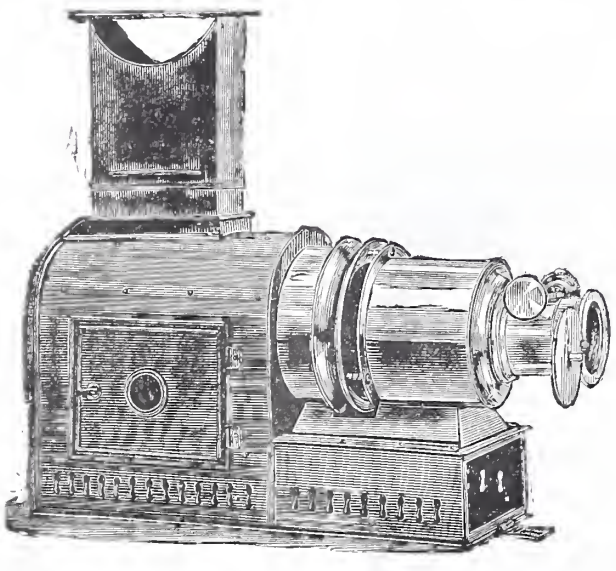


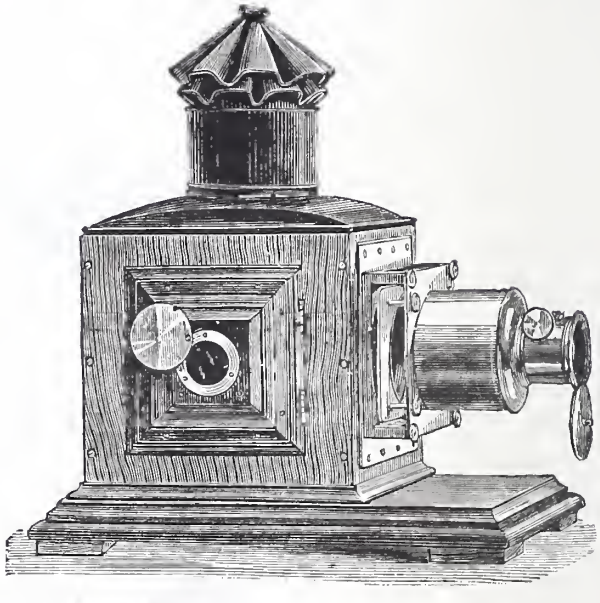
THE BLACKFRIARS PHOTOGRAPHIC AND SENSITISING CO.

ARE NOW SUPPLYING ALL KINDS OF

LANTERNS

AND ACCESSORIES.





SOLE LONDON AGENTS

For Messrs. Walter Griffiths & Co.'s Hand Cameras, Lantern Slide Cameras.

ALSO SOLE AGENTS FOR

ANSCHUTZ CAMERAS, ANSCHUTZ TACHYSCOPES, CONGRESS LENS, & PURSE CAMERAS.

NEW ILLUSTRATED LIST OF LANTERNS, etc., also our NEW ILLUSTRATED CATALOGUE, containing 300 pages, profusely illustrated, sent POST FREE on application.

LIBERAL TERMS TO DEALERS.

WORKS—

1, SURREY ROW, BLACKFRIARS RD., LONDON.

OUR LANTERN SCREEN.

A Monthly Supplement to the "Amateur Photographer."

No. 2. **NOVEMBER 25, 1892.**

Our Dissolving Views.

"Our Lantern Screen" has been very heartily welcomed by one and all, and we hope that all our readers will assist us in making it a greater success than it is, by recommending the paper to their friends, by sending us notes and news and suggestions.

In conjunction with "Our Lantern Screen," we have commenced a series of Monthly Lantern Slide Competitions, and the following are the conditions, etc. :—

PRIZES.

First Prize	Silver Medal and Clasp.
Second Prize	Bronze „ „
Third Prize	Certificate.

SUBJECTS AND LATEST DATES.

Sea Pieces and River Scenery	Dec. 17th.
Portraiture and Figure Studies	Jan. 14th.
Instantaneous Work..	Feb. 11th.
Architecture (exterior and interior) ..	Mar. 18th.

Each competitor must send in two slides. The slides must be mounted and be properly marked, and bear the title of the picture legibly written on the face of mask. Any slide not properly marked will be disqualified. The marking which must be adopted is that most general, viz., two spots (white or coloured) on the face of the mask, which said spots should be placed downwards next the condenser in the lantern, so as to show the slide the correct way on the screen.

Past prize winners of the Gold and Silver Medals in our Annual Lantern Slide Competition, or past winners of the Silver Medal in our Monthly Lantern Slide Competitions, are disqualified. Any competitor winning a Silver Medal will be disqualified for any subsequent competition, but if competing he may be awarded an extra silver bar for the ribbon. Winners of the Bronze Medal or Certificate can only compete for the higher prize or prizes in subsequent competitions.

The slides of competitors which do not gain a prize will be divided into three classes according to merit, and the competitors' names, etc, published in the next number of "Our Lantern Screen."

Winners of the Silver Medal must supply to the Editor on demand an unmounted print from the original negative from which the lantern slide was made.

All slides entered for competition to become the property of the Amateur Photographer.

Entry forms, etc., may be had by forwarding a stamped addressed envelope to the Editor.

The popularity of lantern shows has been made pretty evident during this last month by the numerous exhibitions at which every evening a lantern entertainment has been the feature.

We have in course of preparation a lantern reading with about 100 to 150 slides illustrating the Peak and Dale country, and we shall be glad to loan this to societies, etc., on application. The lecture is well written, and the slides form a suitable running commentary upon the same.

Dissolving effects are not always successful, and we must confess that to us to see a ghostly portrait dissolve into a long-eared quadruped is not happy, though possibly suitable. We were at a local society show last week, when a well-arranged group was meant to dissolve into a landscape, and whether something stuck or somebody was not quick enough, the result was a couple of six-foot lovers enjoying themselves in the midst of a lake. Slightly damp, we should think, for the lovers, and damping for the lecturer, as well as the lanternist.

The question is, what is the best method of changing pictures on the screen? Some audiences complain that the rapid change from light to darkness, and *vice versa*, as obtained with some carriers, is dazzling and painful to the eyes, whilst others complain that the plain push through is not pleasant, especially as, as will generally happen, some slides stick halfway.

The following is the itinerary of the Amateur Photographer 1892 Lantern Slides:—

1892.		Feb.	11 Haltwhistle
Nov.	28 King's Lynn	„	13 Hexham
„	29 Peterborough	„	14 Sunderland
„	30 Yarmouth (Cam. Club)	„	17 Selby
Dec.	1 Yarmouth (Photo. Club)	„	18 Bootham
„	3 Hull	„	20 York
„	6 Wolverhampton	„	22 Stockport
„	8 Wigan	„	23 Oldham
„	9 Warrington	„	24 Lancaster
„	12 Ashton-under-Lyne	„	27 Sheffield
„	13 Manchester	Mar.	1 Crewe
„	14 Farnworth	„	3 Walton
„	16 Lewisham	„	6 Accrington
„	19 Blackheath	„	7 Keighley
„	20 Faversham	„	8 Wakefield
„	22 Hastings	„	9 Huddersfield
„	23 Maidstone	„	10 Dewsbury
„	27 Guildford (Rev.-Atkins)	„	14 Hove
„	28 Brighton	„	15 Eastbourne
„	29 Sutton	„	16 Lewes
„	31 Polytechnic, London, W.	„	18 Leytonstone
1893.		„	20 Croydon
Jan.	2 Richmond	„	21 Sydenham
„	3 Guildford (Photo. Soc)	„	22 Woolwich
„	6 Blackburn	„	24 Brixton
„	13 Munster	„	28 East London
„	19 Gloucester	April	3 North Surrey
„	20 Hereford	„	5 Ramsgate
„	23 Devonport (Cam. Club)	„	8 Cirencester
„	24 Plymouth (Graphic)	„	10 Cheltenham
„	25 Devonport (R. N. Col.)	„	13 Torquay
„	30 Todmorden	„	15 Oxford
„	31 Burnley	„	18 Scunthorpe
Feb.	2 Stockton	„	21 Glasgow
„	3 Whitby	„	25 West London
„	7 Newcastle	„	28 Tunbridge Wells
„	8 Durham	May	1 Kensington
„	9 Sunderland	„	5 Phot. Soc. Ireland.
„	10 Tyneside	„	9 Bolton

A smart bit of work was done at the Hackney show on 17th inst. A negative of the Hon. Sec., Mr. W. Fenton Jones—who was presented with a handsome clock for past services—was

obtained, and by aid of the Platinotype Company's new oxy-magnesium lamp and a Paget Prize printing-out lantern-slide, a completely finished lantern-slide was thrown on the screen, the whole being done in 120 seconds. This is good business indeed.

A correspondent kindly sends us the following note *re* green lantern-slides :—I was interested in your editorial note on green lantern-slides, because I had just got my fine greens in another way—by intensifying with mercury a uranium-toned (pyro-developed) slide, without discharging the brown colour. Very little intensification is got, nor is the brown discharged by the ammonia following the mercury, but on again toning the intensified slide for a prolonged time in the uranium (and ferridcyanide) bath, the colour ultimately becomes emerald green. I have generally got Prussian blues on slides slightly washed by reducing them with ferridcyanide and hypo.

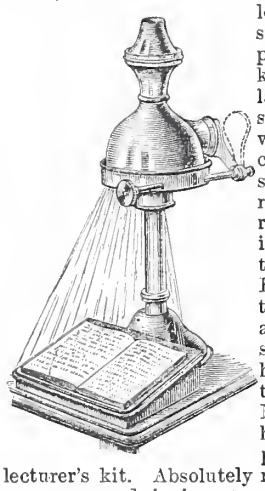
Lantern Notes and Novelties.

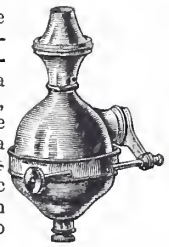
WE have noticed several lantern novelties since the appearance of our last "Lantern Screen," namely :—

Rice's Screw Carrier Grip; "A. P.," November 4th, p. 324.
The "Optimus" Enlarging and Projection Lantern; "A. P.," November 11th, p. 343.
Butcher's Combination Cover Glass and Reflectoscope; "A. P.," November 11th, p. 344.
Brun's Glossy Colours; "A. P.," November 11th, p. 344.
Tylar's Universal Lantern-slide Printing Frame; "A. P.," November 11th, p. 344.

THE "LECTURER" CANDLE LAMP.

Benham and Froud, of Chandos Street, Charing Cross, have introduced, as we announced last week, this new lamp for lantern lecturers, and it is constructed on the same principle as their well-known Holiday candle-lamp. The candle is a special hard variety, which is kept at one constant height by a spring, and the light is reflected by a parabolic reflector, which is shown in the diagram, on to the book or manuscript.





For travelling, the candle tube slides up, the foot takes off and reverses, forming a neat little parcel as seen above. A red signal sight hole, actuated by a milled head, is provided at the back; and after trying the lamp at the judging of our Monthly Competition Slides we have no hesitation in saying it is at once a practical and useful adjunct to the lecturer's kit. Absolutely no light escapes into the room. There is no mess, and it is extremely easy to read the smallest print by its aid.

"APTUS" LANTERN SCREENS.

Sharp and Hitchmough, of 101 and 103, Dale Street, Liverpool, have forwarded us samples of their lantern-screens. One, the Aptus washable cloth, is a great boon. It is supplied in one piece up to 8 ft. square, mounted with rollers, top and bottom, for 15s. All lanternists know how easy it is to soil a screen, and we tried by getting an office-boy to pass his grubby hands over the same, and then tried to eradicate his sign-manual with a little soap and water, and succeeded admirably. The cloth does not mark easily nor crack.

Another screen is the special dead-white opaque material. We have just had our office screen primed and painted, and felt rather proud of it, but on placing the sample of Aptus on it the superiority of the latter was at once apparent. The prices are reasonable, a 9 ft. screen mounted on roller and batten, with cord and pulleys, being only 25s. These screens have found considerable favour in the lantern world, Messrs. Sharp and Hitchmough supplying wholesale, and we can heartily recommend them.

THE "OPTIMUS" LANTERN.

Messrs. Perken, Son, and Rayment, of 99, Hatton Garden, E.C., have just completed the handsomest lantern it has yet been our lot to see. It is a triunial, with all the latest improvements, manufactured of very dark rich rosewood, with aluminium fittings everywhere, and is a picture that would disgrace no room.

THE "OPTIMUS" LANTERN OBJECTIVE.

The same firm have also introduced a new lantern objective of the Petzval type with exceptionally flat field, and from the use of the new optical glass, transmiting a very brilliant image. The actinic and visual foci of the lens coincide, so that it may be used for copying, enlarging, and portraiture.

THE "ENTERPRISE" METAL BINDING STRIPS.

The Photographic Enterprise Co., 41, Erasmus Road, Birmingham, have forwarded us some samples of their metal binding strips. The shape of the binder is already formed, and it is merely necessary to pass the strip round the lantern slide, and push a little tongue of metal through a slit and bend over to lock it.

S. AND J. MITCHELL, 17, Northgate, Blackburn, make a special feature of the hire of lanterns, screens, and slides, and send us a list of charges, which are certainly not exorbitant.

GREGORY AND CO., 51, Strand, W.C., are still adding new slides in their famous military and naval types. We specially commend these sets to all those in or near garrison and naval towns, and the public generally are by no means backward in appreciating our noble defenders.

PAGET PRIZE LANTERN PLATES.

The Paget Prize Plate Company, of Watford, Herts, have sent us samples of the above plates which are made in two rapidities. The rapid, which are six times more rapid than the slow, give black tones, and are very suitable for reduction in the camera by artificial light. The slow are specially intended for reduction in the camera by daylight, or contact printing by artificial light, and give from black to red tones.

Both samples have given us very good results, clean working, vigorous, and yet full of delicate gradation. But we certainly prefer the slow, because of the warmer tones. These have given us most excellent results, and the brown colour, which is easily obtained, is one which shows well on the screen. The developer and directions for the warm tones are as follows :—

WARM TONES.—*Developer* :—Solution 1: Hydroquinone, ½ oz.; sulphurous acid, ½ oz.; potassium bromide, 60 gr.; water to, 20 oz. Solution 2: Caustic soda, ½ oz; sodium sulphite, 2½ oz.; water, to 20 oz. Solution 3: Bromide of ammonium, 1 oz.; carbonate of ammonium, 1 oz.; water, to 20 oz. Carbonate of ammonium should be in clear lumps; if from exposure to the air it has become coated with the white powdery bicarbonate the latter should be scraped off. Brown: Exposure, 60 seconds 1 foot from gas-flame, or 2 inches of magnesium wire burnt at a distance of 3 feet. Developer, solution 1, ½ oz.; solution 2, ½ oz.; solution 3, 100 minims; water to 2 oz. Time required in development, about five minutes. Purple Brown: Exposure, 90 seconds 1 foot from gas-flame, or 3 inches of magnesium wire burnt at a distance of 3 feet. Developer, solution 1, ½ oz.; solution 2, ½ oz.; solution 3, 200 minims; water to 2 oz. Time required in development, about 10 minutes. Purple: Exposure, 3 minutes 1 foot from gas-flame, or 3 inches of magnesium wire burnt at a distance of 2 feet. Developer, solution 1, ½ oz.; solution 2, ½ oz.; solution 3, 250 minims; water to 2 oz. Time required in development, about 12 minutes. Red: Exposure, 5 minutes 1 foot from gas-flame, or 5 inches of magnesium wire burnt at a distance af 2 feet. Developer, solution 1, ½ oz.; solution 2, ½ oz.; solution 3, 300 minims.; water to 2 oz. Time required in development, about 15 minutes. Wash the plate in running water for at least three minutes before fixing; otherwise a yellow stain may afterwards appear.

FIXING BATH.—The simplest is the following :—Hyposulphite of soda, 6 oz.; water, 20 oz. After fixing, the transparency is well washed for one hour in several complete changes of water.

PRINTING-OUT LANTERN PLATE.

The above firm have also introduced a printing-out lantern plate, which is coated with a gelatino-chloride emulsion, which is printed-out like any chloride paper, and toned and fixed in the same way. The variety of tones and the ease with which lantern slides can be made by these plates should lead many to adopt them.

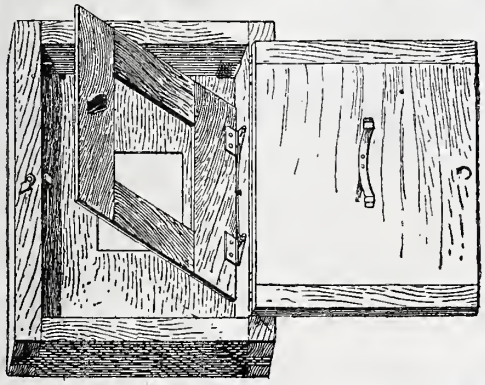
Mr. Fred V. A. Lloyd, successor to H. Newton and Co, 5, South John Street, Liverpool, sends us his complete and well illustrated catalogue of lanterns and slides for sale or hire.

Mr J. W. McLellan, of 36, St. Paul's Road, Canonbury, has just issued a new list of lantern slides, and also some samples of his work, from an examination of which we have no hesitation in saying that our readers might go farther and fare worse. The prices, too, are very reasonable, considerably lower than usual.

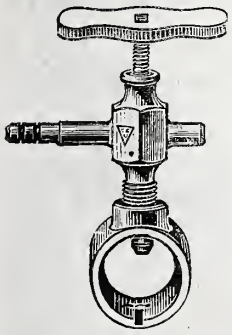
The Blackfriars Photographic and Sensitising Company, of 1, Surrey Row, Blackfriars, are offering some capital lanterns, both in wood and Russian iron, together with slides and accessories of all kinds. This firm are now the wholesale and retail London agents of Griffiths' well-known lantern-slide cameras.

W. Butcher and Sons, of Blackheath, have issued a new lantern list comprising all sorts of lanterns, from the humble oil at 27s. 6d. to triunials at £20. Their specialities are opaque lantern screens, combined coverglass and spot binder, reflectoscope, and a combined projection and enlarging lantern. Special terms are also offered for entertainments and hire.

J. Dore, of 27, High Street, Sandown, I.W., has sent us one of his patent printing frames for lantern-slides and opals. As will be seen from the diagram, it takes the form of a deep box, the negative being placed in position, the hinged frame being clamped down on to it, and the lantern plate or opal dropped in the opening and the

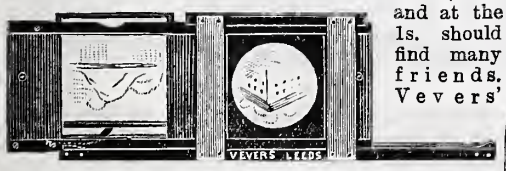


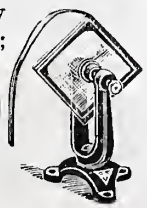
back closed. It has no loose parts, and negatives of any thickness can be used. Any number of transparencies may be printed from exactly the same part of negative. The frame can be obtained in any size, and the smallest negative used in the largest size. It is neat, practical, and efficient, and will be found specially useful for printing-out lantern-slides as well as ordinary lantern work.



C. C Vevers, of 12, Market Street, Briggate, Leeds, sends us some practical useful lantern novelties and his catalogue, which is arranged on a very simple yet easily grasped plan, which is not always the case.

The patent couple regulator is a handy and efficient fitting for any bottle, and the screw working at the top is a good idea, and the gas may be turned full on and the supply regnlated by the screw. The registering slide carrier, with automatic slide raiser, is a capital idea, which shonld be in every lanternist's possession. The lantern slide binding vice is a handy arrangement, which screws down to any block of wood or bench, or stands alone, and at the low price of 1s. should find many friends. Vevers'





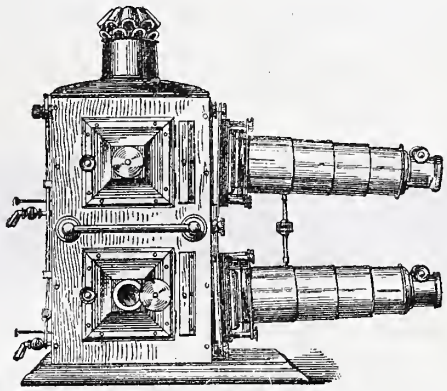
coloured binding strips and masks are well known, and he is now offering gummed sheets of printed numbers for numbering slides.

Fitch Celluloid Films and Dish.

Mr. H. Fitch, of 34, Angell Road, Brixton, has sent us a sample of his celluloid lantern-slides and developing dish. The former is on stout celluloid, and in Moore's patent metal mask and binder is quite as rigid as a glass slide, with about one-quarter of the weight. The developing dish is provided with a well, it is extremely light, and will be a useful dark-room adjunct.

The Lantern at the Stanley Show.

There are several very good lantern novelties at the Stanley Show. Platt and Witte have an excellent portable screen, mounted on spring rollers, which is contained in a case measuring 4 ft. by 3 in. by 3 in. The top of the case, which is cut across diagonally, lifts up, forming side supports for the screen, which hooks on to brass hooks

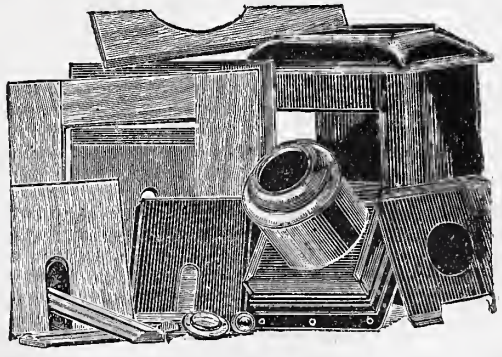


at each side. This is an extremely ingenious and a useful idea, as when not in use the screen runs back into the box, and is protected from dust and dirt. The same firm have also some very good biunials fitted with a rolling curtain effect and a screw disc adjuster, as seen in the accompanying diagram. Tylar shows his lantern slide vice, masks, binding strips, and white ink, etc.

The City Sale and Exchange offer special facilities for the hire or purchase by easy instalments of lanterns and all lantern requisities. They also have some special thin glass slides, good technically and artistically.

Morley and Cooper have an excellent lantern, which they call the Bi-tri-unial, which it is possible to use as one, two, or three lanterns, and the top one may be used for either oil or limelight. Or the lanterns may be used side by side. The brass fronts are worked upon a central swing, which renders adjustment of the disc very easy, the adjustment being by rack and pinion. This firm have also been appointed special retail agents of Messrs. Levi's flying carrier. As shown in the diagram, the sides are cut away, so that it is very easy to grasp the slides, and by a special arrangement the slides are passed through very quickly and the screen temporarily darkened, thus forming a dissolver.

The Sun Camera are offering a novelty in the shape of lanterns in parts, thus enabling the amateur mechanic to make his own lantern. The woodwork is sufficiently advanced for the amateur to finish with the ordinary hand tools, *i.e.*, the sides and door clamped and



keyed, front and door turned for sight-hole and condenser, and doo mouldings finished, the whole complete for 21s. Superior sets with brass stage and Russian iron lining and dome, complete for 42s., whilst biunials in parts of best quality may be had for 95s. This firm also show a new dissolving carrier of neat and practical design

Monthly Lantern Competition.

NOVEMBER, 1892.

LANDSCAPE, WITH OR WITHOUT FIGURES.

CLASS I.

*** Red. = reduction; con. = contact.

1. MARRIOTT, MRS. M. E. (Liverpool).—(1) "Rosscatt, co. Donegal." Red.; Edwards'; hydro. A very fine slide, yet a warmer tone might have been an improvement. (2) "Trees." Red.; Ilford special; hydro. Technically a good slide, but poor artistically.

2. VARDEN, G. E. (London).—(1) "Perivale Church." Con.; Mawson; pyro and amm. Wants at least an inch more mask at the top. (2) "Winter." Ditto. A very beautiful slide.

3. FIRTH, G. F. (Wakefield).—(1) "Summer." Red.; chloride; hydro. Wants clouds, and not plesaing tone. (2) "Winter." Ditto. Another good snow scene.



No. 1.] ROSSCATT, CO. DONEGAL. *[Mrs. Marriott.*
[SILVER MEDAL].

FARMER, H. E. (Loughton).—(1) "Langdale Pikes." Con.; Fry; pyro and amm. carb. A pleasing tone and good sky, but want of sharpness very marked. (2) "Pike o' Stickle." Red.; Alpha; hydro and caust. pot, toned combined bath. A good though little too hard slide spoilt by the tone.

DEAN, S. (Huddersfield).—(1) "Sychnant Pass." Con.; Ilford special; hydro. Well chosen point of view of rather hackneyed spot; slide rather over-exposed, no clean whites. (2) "Above Dwygyfylchi." Ditto. A good slide, pleasing tone, but wants clouds.

SHAW, J. (Manchester).—(1) "Rabagal Mountains." Con.; Mawson; pyro amm. Good slide, a little too heavy. (2) "At Rabagal." Ditto. Not such a pleasing tone as the other, and a little hard.

ELLSWORTH, W. T. (Liverpool).—(1) "Mill, near Barmouth." Con.; England's; hydro. A good slide, but a little two brilliant. (2) "The Old Home." Ditto. Softer and the better of the two.

KENWORTHY, J. W. (Ashton).—(1) "Buar Brae." Con.; Ilford; hydro. A very beautiful slide, but a little too blue. (2) "A Wayside Cottage." Ditto. Very hard and chalky.

GEAR, J. H. (London).—(1) "Eel Bobbing." Red.; Imperial; pyro and amm., uranium toned. A very pleasing tone, though rather hot. (2) "Repose." Ditto. A good slide, but no clear whites.

WALKER, J. (Galashiels).—"Pandy Mill." Con.; Mawson; pyro. By no means the best view of this well known spot, slide a little hard. (2) "Fairy Glen." Ditto. A good slide which shows well on screen.

TIMMINS, C. A. (Runcorn).—(1) "Pleasant Pastimes." Red.; Edwards'; pyro and amm. A little too heavy. (2) "Cottage and figures." Ditto. A well made slide; might have had more sky in it.

PLEWS, F. W. (E. Keswick).—(1) "Bardsey Lane." Con.; Thomas; pyro and amm. A nice little bit, but film stained. (2) "Low Gipton Lane." Ditto. Utterly spoilt by deep yellow staining of film.

DAVIDSON, W. N. L. (London).—(1) "A Kentish Lane." Red.; Ilford special; hydro. soda. (2) "A Kentish Scene." Ditto. Both show careful selection, excellent work, and could be improved by more clouds; those already in are not enough.

STABB, J. (London).—(1) "Windsor." (2) "E. Moulsey Weir." Con.; Mawson; pyro amm. No. 2 a little chalky; 1 a beauty.

CLASS II.

OWEN, T. W. (Coventry).—(1) "Rushpit." Red.; Paget rapid; hydro and caustic soda. Only wants clouds to make a very good slide. (2) "Coat of Arms Bridge." Con.; Edwards'; pyro and am. Stained and utterly without artistic feeling.

BROWN, J. (Newcastle).—"Gosforth Lake." Con.; Thomas; pyro and amm. A very fine effect, not too clean a slide. (2) "Riverside Musings." Ditto. Very poor.

FARTHING, W. J. (Chirk).—(1) "Shining like Silver through the Shade." (2) "A Welsh Homestead." Red.; Thomas; pyro and am. Two good slides spoilt by over-development.

BENNETT, E. E. (London).—(1) "Bracken and Ferns." (2) "The Rays of Early Morn." Con.; Mawson; pyro and soda. In No. 2 a very fine effect of light. No. 1 is poor.

STEIN, J. (London).—(1) "Two Finger-posts." (2) "Twitch Burning." Red.; Mawson; pyro and am. No. 1 is too black and hard, 2 very fair.

CHILD, C. J. M. (London).—(1) "Sunset." (2) "By the Waterside." Con.; Ilford special; quinol. 1 a good bold effect, but 2 is soot and whitewash.

COULTHURST, S. L. (Manchester).—(1) "Glenoe." (2) "By Stream and Cot." Con.; Paget slow; pyro and am. carb. Two excellent subjects, but so hard and chalky as to spoil their chance completely, and No. 2 wants clouds badly.

HARDING, GEO. (Stourbridge).—(1) "At the Farm Gate." (2) "A Corner of the Meadow." Con.; Ilford ordinary; hydro. Two good subjects spoilt by a hideous "yallery-greenery" tone.

MORGAN, S. DE (Ryde).—(1) "Godshill." (2) "Spring Vale." Con.; Fry's and England's; hydro. Careful work, but both want clouds.

TAYLOR, F. (Grange-over-Sands).—(1) "Odde." (2) "Mundal." Con.; Mawson; quinol. Good slides, but not clean.

WILSON, T. E. C. (Liverpool).—(1) "Harvesting." (2) "The Mill Wheel." Con.; Edwards's; pyro and am. and hydro. Both too hard and chalky.

PEDDIE, A. (Sunderland).—(1) "Drummond Tower." Con.; Thomas; hydro. Too hard and chalky.

ANDREW, W. S. (Bo'ness).—(1) "On the Ellesmere Canal." (2) Ditto. Red.; Ilford special; hydro. No. 1 is decidedly good; 2 very poor and thin.

PITKETHLY, A. (Leith).—(1) "Lamp o' Lothian." (2) "In Kirkton Glen." Red.; Mawson; pyro and am. No. 2 is a good slide a little too hard, and is handicapped by No. 1, which is not good.

CLASS III.

Gladstone, W.	Boness, N.B.	Piper, C. W.	Blackheath
Maxwell, J. P.	London	Richardsen, Mrs. J.	Nottingham
Burnham, E.	Eastbourne	Muir, T. S.	Glasgow
Emery, G.	Hove	Dart, W. B.	Torrington
Gethen, W. C.	Hereford	Gill, W. H.	Ashton
Northwood, W.	Stourbridge	H. M. P.	Plymouth
Bennett, R. and R.	Oxford	Cheyne, T.	Ashton
Pearce, R. J.	Durham	Neill, D. J.	Liverpool
Thirkettle, W. L.	London, N.	Lawless, R. E. S.	London
Bennett, W. G.	Waltham	Crowther, W. S.	Pudsey
Soames, W. H. R.	Blackheath		

Mr. C. D. Taylor, Manchester, sent us two slides insecurely packed, which were received smashed all to pieces.

This, our first Monthly Lantern Competition, has not been so well supported as it should have been, but at the same time there is actually no very bad work.

There is not, we think, any one prevailing fault, if we except that of chalkiness or too much brilliancy. It has, we know, been for long a cry with some that there must be bare glass in a lantern slide. This does not necessarily follow. One or two small bits of bare

glass are allowable, but many operators seem to think that if they can get their slides so that when laid down on white paper nothing but the image can be seen, all's well. This, however, is not so. Too much bare glass, or too many high lights, especially if accompanied by very heavy, dense shadows, such as are obtained by



No. 2.] WINTER. *[G. E. Varden.*
[Bronze Medal].

a little under-exposure and a developer strong in bromide, and the subject will look on the screen hard, chalky, and painful.

Another fault is that of blank skies. It is all very well, but no matter how good your slide, if it be a landscape, if it has absolutely a bare glass or a blank sky, it is ruined. Many a comparatively poo



No. 3.] WINTER. *[G. F. Firth.*
[Certificate.]

slide may be quite saved by a suitable sky, particularly with a low horizon, and we strongly recommend our competitors to pay more attention to this part of their slides.

One very noticeable fault with all the slides in the first class was inequality; that is to say, whereas one slide was perfect both technically and artistically, the companion slide was comparatively a miserable failure. This is especially noticeable with the prize slides, and it is to be regretted that these competitors did not pay a little more attention to this point. Mr. Varden, who takes the Bronze Medal, lost the Silver by this. A little more attention to "Perivale Church," in the shape of a little less chalkiness and a more suitable mask, and he would have come out first.

Monstrosities in tone do not commend themselves to our sober-sided, conservative judges, and bilious, pea-green, grass-green, or claret colour do, we must confess, not look well. On the other hand, black is frequently too heavy, and for our own taste we prefer a warm brown or brown-black, and this is a colour which shows well on a screen; allowing plenty of transparency in the shadows, it is yet rich enough to look well.

With these brief notes we must conclude. We had hoped to have been able to criticise all the slides sent in, but the demands upon our time have been so great that we have found this an impossibility.

Flashes.

The last thing out in the lantern—the light.

It is not wise to take hold of a cracked lime after turning out the light. The lime doesn't mind much, but the operator's fingers do.

Nor is it wise to pack two lantern-slides, with a piece of paper in between, in an envelope or cut down lantern-slide box, and tie a label to the package for the address, and then stick the stamps on the box.

I called on the Editor the other day to help him judge the slides, and he said, "Well, we may as well start; hold that sheet of paper out." I did so, and he just poured out two slides which had been packed like this. I'm no novice at judging or at lantern work, but to judge two slides in about two thousand bits, is beyond me. Besides, the task of fitting the bits together is prejudicial to one's fingers and good temper. Oxygen is apt to explode under such circumstances.

Have you been to the Stanley Show? If not, go at once. There are some good things in lanterns, lantern-slides, etc,, in the apparatus department, and in shows. Well—didn't I expand and enjoy myself! Hot wasn't in it. Whether all cyclists are photographers, or all photographers cyclists, I don't know, but, anyhow, there was a big crush to get in the entertainment hall, which is next door to the photo. section. We've had some good shows too, which reflect great credit on Mr. Herbert Smith, the Secretary of the photo. department.

Downstairs, in the body of the hall, my head was in an awful whirl. Everything was round and going on wheels, and the multitude of machines, all exactly like one another to my untutored eyes, and all claiming to be the best in the show, was simply bewildering. Young ladies doing short laps in short skirts, perspiring youths working like the proverbial nigger, and never getting any forwarder, like convicts on a treadmill, and cheered by their pals, whilst all that I could see was a big clock face with funny long hands, with coloured circles at the ends, and then didn't they cheer when one hand got in front of the others, and the man in charge took hold of it and stopped it. Where the fun came in I didn't see, but I suppose the man who took the gate money did though.

I asked him how it was worked, and he said,"By gas and wheels sir." Whether he was joking or not I don't know, but there was certainly plenty of gas about, some flaring overhead, some in the tyres, they told me, and my poor ears at least can bear evidence as to the amount of gas expended by the showmen in puffing up their cycles. There should certainly be no lack of gas for inflating the tyres.

I'm no bad hand at passing slides through the lantern. I can show them as quickly as anybody, but at the Hackney Exhibition one lecturer beat the record. Ten slides were passed through in seven seconds, so it is said, and somebody is not satisfied. A lecture which was to have lasted an hour and a quarter, only spun out to three-quarters of an hour. Oxygen.

Lantern Slides by Reduction.

A SIMPLE APPARATUS FOR MAKING LANTERN SLIDES BY REDUCTION IN THE CAMERA BY ARTIFICIAL LIGHT OR DAYLIGHT.

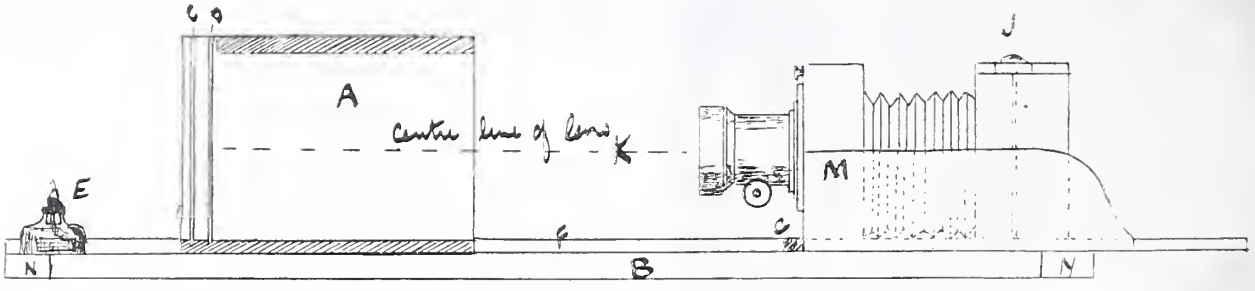
By E. B. Wain.

THE apparatus consists of a baseboard, B, 3 ft. 9 in. long, on which is placed the camera, and a box, A, of sufficient dimensions to take the negative which it is desired to reduce.

The baseboard is made of deal, or any suitable timber, 1 in. thick, and is clamped at the ends N N to prevent warping. Two pieces, F F, ¾ in. by 1 in., are fixed by screws on each side, to act as guides for the box A, and so keep it in line when sliding backwards and forwards. A cross-bar, G, ¾ in. square, serves to keep the camera in position.

The box A is made of ½ in. timber, with two grooves, C and D, the former to take a sheet of ground-glass to diffuse the light, and the latter to take the negative.

Instead of a carrier for smaller sized negative, a second box, A', is used, which is screwed to a block, H, which serves to keep it true in the slides and to raise the plate to the centre line of the lens at the point K.



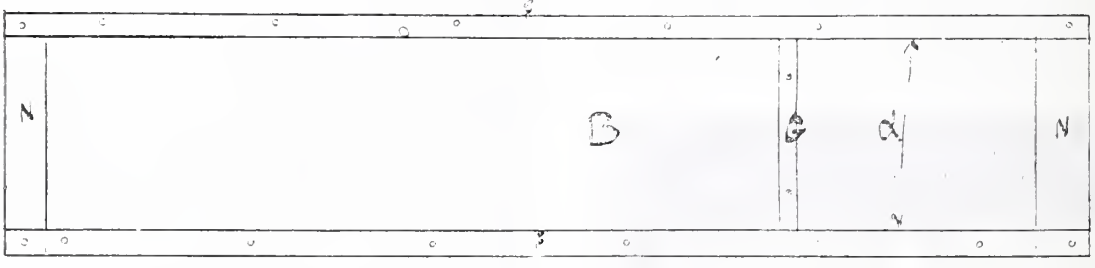
ELEVATION (Scale 1½ in. to the foot).

joiner for a few shillings. The only care required is to keep the slide FF true and parallel, and the centre line K of the lens and the negative in their correct position.

The rising and cross fronts of the camera allow for the necessary adjustment, if only part of the negative is required to be copied. Where, however, the camera is not fitted with a cross front, a little liberty should be left in the width, and so as to allow for side movement.

To use the apparatus the negative and ground glass are placed in their grooves D and C, and the box brought to the proper distance from the lens according to the size of the positive image required on the lantern plate. The fine focussing is then done with the rack screw of the camera, the focussing screen having been carefully marked to show the position of the sensitive plate in the dark slide. The lens is then capped, the focussing cloth loosely thrown over the box A and the camera, to prevent any rays of light finding their way directly into the lens, except through the negative, the dark slide is fixed in position, cap, etc., withdrawn, and exposure made.

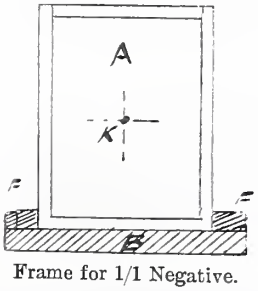
For artificial light, from 6 to 9 in. of magnesium ribbon burned at a distance of 2 in. to 3 in. from the ground-glass gives ample illumination when reducing a full-plate negative to lantern size, using a Thomas's plate. Care must be taken to illuminate the whole surface evenly by burning the two pieces of magnesium on opposite sides of the negative, say, 1 in. from the edge. The exposure given is for a negative of good printing density, and can easily be varied



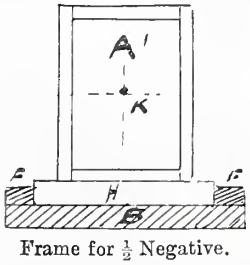
PLAN OF BASEBOARD.

Any camera or lens may be used, provided the baseboard, B, is made to fit. In the case of the apparatus as illustrated, the camera used is a 5 by 4 studio camera, with portrait lens about 6 in. focus. A carrier to receive the lantern plate is fixed in the dark-slide, J.

As the centre line of the lens exactly coincides with the centre of the negative, D, with a whole-plate negative, both camera and box are placed in the same line, but where this was not the case, as where a large camera was used, it would be necessary to block up the box, as shown in A.' Of course, with a smaller camera, the block would have to be placed under the camera.



Frame for 1/1 Negative.



Frame for ½ Negative.

The apparatus can easily be made by any amateur with the most elementary knowledge of carpentry, or would be supplied by any joiner for a few shillings.

for thinner or denser negatives by either using more magnesium, or, in the case of the former, increasing the distance from the ground-glass. The spirit lamp E will be found useful for lighting the illuminant. Focussing can be easily done by means of a paraffin lamp, or gas burner fixed at the back of the negative, and by using a lamp with an opal or ground-glass globe the exposure may be made, but the time of exposure will be increased, and it will hardly be possible to ensure so equal illumination as with the magnesium.

When the focus is once fixed it will be seen that it is quite possible to make any number of slides from any number of negatives without alteration or risk of scratching the negatives, as in contact printing, and it will be found that where the camera allows for sufficient extension, it will be easier to print slides from small negatives in the camera than in the printing frame.

For daylight exposures all that is necessary is to place the apparatus on a suitable support facing a window, but it is not possible to give any exposure time, owing to the variation of the light. As a rule the magnesium exposures will be found most satisfactory. By using the spirit lamp to light the ribbon and a small pair of pliers to hold it, there will be no trouble in working and as magnesium is now so cheap the cost of working will be trifling, an ounce of ribbon being sufficient for some scores of exposures.

"**The Photographic Record**" for November, Elliott & Son's free monthly, comes to hand. Bright and lively as the previous numbers.

Single Oil Lanterns for Lecture Purposes.

By D. W. Noakes, Greenwich.

The production of photographs on glass, improvements in the means of illumination, and the production at a really cheap rate of the optical parts, have combined to achieve for the lantern a position as an educational instrument, rather than the toy it was once regarded.

The production of a portable lantern with 4-inch compound condensers and double combination achromatic front for the low sum of from 30s. to 40s., has done much to make the magic lantern more popular than ever.

The "improvement" in cost is not the only one; its portability, its radiant and its optical system combined, make it far and away the superior of the old type phantasmagoria lantern costing treble.

The eighteen-penny toy lantern possesses all the necessary parts, of the most powerful instrument, viz., a radiant, an optical system, and a body to carry them—the difference being in intensity and degree. It will be better, perhaps, to dissect the lantern, and speak of each part separately. In these few remarks to our readers it is impossible to go into the optical problems involved in the construction of lanterns; those wishing (and all should do so) to gain an optical knowledge of the instrument they are working cannot do better than consult Lewis Wright's "Optical Projection" or some other standard work on optics. Space limits our remarks to the use rather than the construction of the instrument here mentioned.

(1) *The Body.*—This, as a rule, in all the cheap forms is made of japanned tin, the only objection being that the heat makes the upper part of the instrument inconveniently warm. This also applies in a stronger degree to "Russian iron" lanterns, the greater body of metal retaining more heat, less being lost by radiation to the surrounding atmosphere. The best body for an instrument, especially where the radiant used is a mineral oil light, is a mahogany body lined with tin, having air spaces between the outer and inner body. The tin body is sometimes described as too weak, but this is not so if the body is properly constructed. With the exception of certain rubbish now in the market, all the cheap form japanned tin lanterns have a stereotyped pattern which is both strong and portable. Attention should be given to the case in which it is contained, as this has to bear all the brunt of ill-usage during transit. In some cases the body part of metal lanterns has been improved by constructing in such a way that the lamp can be lit and adjusted outside the instrument, and then placed in working position without removing the tall chimney. To sum up, then, a japanned tin body is both strong and portable, and we think preferable to Russian iron, but the most comfortable working body, apart from its better appearance, is a mahogany body—tin lined—especially as the cost of the latter does not exceed Russian iron.

(2) *The Optical System.*—The body just described has no work to do in an optical sense, and might be constructed out of an egg box or a biscuit tin; but the optical system has genuine work to do, and upon the quality and construction of the lenses used depends to a large extent the quality of the image projected, although it must also be taken into consideration that the radiant strongly affects both the definition, flatness of the field, and covering power of the lenses used. It would be well to make this point absolutely clear, as we feel it is not generally understood. Take, for instance, a lantern fitted with oil light—we will project a photograph five or six feet in diameter—this being an easy diameter to test—now remove the lamp and use a blow-through jet with the same optical system and the same slide, the improvement in intensity of brilliance is, of course, most marked, and on careful examination a remarkable gain can also be detected in the defining power of the lenses. Substitute the blow-through jet for a mixed gas jet, and still greater improvement follows, showing, without doubt, that the optical system is strongly affected by the radiant used; but this does not destroy the fact that if the optical system is bad no good results can be got; In fact, we have known some optical systems which when limelight instead of oil light is used, their faults have become more flagrant and noticeable. Good optical parts, therefore, are necessary, no matter what radiant is used, and it can be laid down as a pretty general rule that an optical system, giving good results with oil light, would give much better results with limelight, the improvement not being solely greater brilliance in illumination, but also in increased sharpness, flatter field, and greater covering power.

The deduction to be drawn from this is that the optical system can only be judged by the result projected on the screen, and we advise all intending purchasers to see their instruments tested in this way before finally deciding. Another note of warning is also necessary at this point, and that is, no matter how good the optical system of your instrument may be, do not attempt too large a picture when oil-light is used as the radiant—to a large extent puffy advertisements have led inexperienced lanternists to attempt what others of larger experience would shrink from. It is well to remember a comparatively small but brilliant picture can be seen farther, and by more people, and certainly is much more pleasing than a larger and weaker picture. Light is like butter; if you cover a large area you must put it on thin, like bread and scrape; it is much better to study economy, and make the same piece of bread do for our butter as we have for our cheese, we shall then have something we can enjoy, but enjoyment is out of the question when one is viewing dense photographs projected on a 12 ft. or 14 ft. disc with an oil-light lantern. No matter how many "thousand candle power" the maker may describe it, it is too often forgotten that a 9 ft. disc requires two and a quarter times the light of a 6 ft. disc, and a 12 ft. requires four times as much.

This leads us to the consideration of the radiant, and in single lanterns that most generally used is the mineral-oil lamp. These are known under many names; but as the principles on which all must be constructed to give good results are the same, our remarks will be found to generally apply.

If the lamp is a new one and never had oil in it, take out the wicks and thoroughly dry them—use only the very best oil—and good wicks. Do not slop the oil over the lamp in filling, neither fill it too full, or it will stink in use. Never carry the lamp filled to an exhibition, and always empty it after the exhibition is over. Do not get your oil chilled, cold oil flows slowly. In lighting do not drop charred pieces of match between the wick holders, or you will stop a proper supply of oxygen from reaching the flames. Keep the inside of the chimney clean and free from sooty deposit. Wipe the lamp thoroughly dry before again using; the oil "sweats" out all over it, and when in use the heat evaporates this oil, creating an offensive smell. In a 3-wick lamp the flame of centre wick should be the highest; in a 4-wick lamp the two centre flames should be higher than the two outer flames. If the front glass cracks across, bind it round the edge with paper in the same way as a slide; it will not crack again.

A new lamp has been recently introduced which is apparently giving great satisfaction, and, personally, we have seen some excellent results. The lamp can be obtained from nearly all the dealers, and in purchasing, the extra cost of this lamp is about 12s. or 14s. above the usual pattern, but the extra outlay is economy of the highest grade, as every picture shown by the instrument profits by it.

General Remarks.—Having carefully wiped the lenses with a soft chamois leather, light the lamp and allow it to remain for five or ten minutes with the wicks only partially turned up, then turn the wicks up still more, but not to the fullest possible extent; and whilst lamp and lenses are thus being gradually warmed, their respective positions can be adjusted in the following way:—Put a slide in the lantern and focus same on the screen; if racking out, the objective does not focus the picture sharply, pull out the front sliding tube a little way. Having focussed the picture, you now know that the objective is somewhere near its working position. Next take out the slide, and leave only the plain lighted disc on the screen, and then try a few experiments with the lamp. By placing it nearer to, or by drawing it farther from, the condenser, or by turning up one or more, or perhaps all, the wicks, the disc may be much improved. Whilst trying these experiments the wicks will be turned up to their highest limit, without smoking. Having, by experiment, got the most evenly and best lighted disc, the slide can again be introduced and accurately focussed, and the exhibition begun in real earnest. Probably, as the lamp gets hotter, the wicks will need turning down a little; or, in the case of the new pattern lamp, the chimney slightly lengthened by means of the chimney rack, and this remark applies more to a 4 than a 3-wick lamp. Note that no part of the lamp touches the condenser, or perhaps it will crack it; and care must be taken not to tilt up the lantern, or oil may run out of the filling hole. When the show is over, do not take off the chimney with your fingers, or you will get them burnt, nor expose the hot condenser to a cool draught, or it will crack through sudden contraction. Empty the lamp and drain out all the oil possible, and turn the wicks down below the top of the wick-holder; even then the oil will sweat out, and lamp will require wiping next time of using. Do not pack the chamois leather in the lantern case; it will probably get greasy and smear the lenses.

It is better to have a separate box for slides, screen, leather, and other little sundries. The best screen is a nice white wall—or an opaque screen; and best results are got by projecting on to a screen, and not through it. If it is compulsory to show through the screen, make it as transparent as possible by wetting it.

In conclusion, it is well to remember that a high sounding name adds nothing to the practical power of a lantern, and that the true test of efficiency is the result projected on the screen.

Skies in Lantern-Slides.

BY JOHN A. HODGES.

A PHOTOGRAPH showing blank white paper in the place of a sky is now universally and justly condemned, and, indeed, is seldom seen except in the productions of the veriest novice. But if the fault be a glaring one in a print, which is of comparatively small dimensions, how much more so is it likely to be in the case of a lantern-slide when magnified many diameters and projected upon the screen. Yet many amateurs who would hesitate to show a cloudless photograph as a print seem to have no compunction in exhibiting it as a lantern-slide. This is the more surprising because it is in reality an easier matter to put a sky into a lantern-slide than it is to do the same good office for a print. There are several ways in which the work may be carried out, the easiest of which I will first describe. Briefly, it consists in printing a sky on a second plate, which is ultimately bound up with the view, and used instead of an ordinary cover glass. When so working, it is necessary in developing the landscape slide to avoid the slightest veiling or discolouration of the sky portion of the view, therefore the sky portion of the negative should be sufficiently dense to prevent any light passing through it and affecting the plate; if it is thin, the sky must be blocked out with a paint-brush and some opaque pigment. The landscape slide being finished, a suitable sky negative is selected and placed in the reducing camera, and a sky slide obtained. Care must be taken, however, if the lighting of the sky negative is from the same direction as the lighting in the landscape, to place the negative in the carrier *film side out*, otherwise when the slide is bound the lighting of the landscape and the clouds would be different. The method is equally applicable to contact printing, but as a reversed image cannot then be so easily obtained, it becomes necessary to print the sky from a negative lighted from the opposite direction to the view, so that when the two are bound face to face the light may appear to be from the same direction. The landscape portion, as it were, of the sky negative should be shielded with a mask roughly cut to the outline of the trees, buildings, etc., in the view, and kept gently moving during the exposure of the lantern plate. The exposure and development of the sky slide should be adjusted to produce a light delicate slide; photographic skies are very frequently far too heavy and dense, and the same plate or process must be used for both view and sky, so that there may be no appreciable difference between the colour of the sky and that of the view. It will often be found that, notwithstanding all precautions, the cloud-forms come down too low and encroach upon the horizon, or obtrude themselves into objects standing out against the sky. This difficulty, however, is easily overcome by cautiously painting the parts which it is desired to remove with a fine sable brush charged with Howard Farmer's reducing solution, the formula for which is so well known that it is unnecessary to repeat it here. This operation must, of course, be done carefully, and the solution should not be used at full strength. It is well to have a glass of clean water at hand, into which the brush can be dipped and immediately applied to the plate if the solution is found to attack the image too vigorously. After this treatment the plate will require to be thoroughly washed before being dried and bound up.

There is another and extremely simple method of masking which was recently suggested to me by the Editor, and which I find answers well. I do not know with whom it originated, though I recollect having seen it described some time ago. A slide is first made from the landscape negative, and developed, fixed, washed, and dried in the ordinary manner, except that development is pushed until the slide is very dense. This will constitute the mask. A second plate is then to be exposed, but great care must be taken to keep it in exactly the same position in the dark slide as was the first; this is all-important, as by this method it is imperative that the plates should accurately register. In order to ensure correct registration, one side of the rebated recess of the dark slide into which the plate drops should be marked, and if each plate be kept pressed tightly against the marked side, no difficulty from want of registration will occur. After the second plate has been exposed it is removed from the dark slide, but not developed. At the same time the landscape negative is removed from the reducing camera, and replaced by a suitable sky negative. The dark slide is opened, the over-developed slide, now to be used as a mask, carefully placed in position, and upon it the previously exposed plate is superimposed, care being taken to keep both plates in accurate register against the mark previously made on the dark slide. To avoid any chance of mistake, a pencil mark should be made on the plate, after exposing for the view, in order to distinguish the top from the bottom. A second exposure should then be given for the sky. Development is then proceeded with in the ordinary way, view and sky making their appearance together. The method is far more simple than it would appear to be from the description, and certainly infinitely easier than attempting to block out a sky negative with a cardboard mask, which mode of working, however skilfully done, generally betrays itself. I should have said that it will be necessary to block out any lights, or half tones, on the mask slide with some opaque pigment, otherwise the finished slide would present a curious combination of "negative" and "positive," not, of course, desirable.

It will also be apparent that the method is susceptible of variation and modification in several ways. For instance, a second plate may be exposed for the landscape and developed, and the sky printed on a separate plate with the mask in front, the two being afterwards bound together, the second plate with the sky on it forming the cover glass. It will be noticed that when the mask is used the image is to a certain extent thrown out of focus, but with the extremely thin lantern plates now in use the loss of definition is practically inappreciable, and if the sky negative happens to be very sharp is an advantage rather than otherwise, a softer and more natural appearance in the clouds being produced.

Although in describing this method of working I have referred only to the reduction process, the plan is equally applicable to contact printing.

A New Idea.

THE "Photographer's Record," Messrs. Elliott and Son's monthly leaflet, makes the following good suggestions for lantern work:—

"The most important point that strikes us in connection with lantern pictures is their shape; the accepted dome and mat shapes are, in our opinion, simply hideous when used for anything but purely scientific subjects, and circles are not very much better. An oblong shape is invariably more pleasing, whether it be rectangular or elliptical. An exception will, of course, occasionally occur, but it will only go to prove the general rule.

"A further source of fatigue to the eyes is the sharp contrast between the brightness of the picture and its black surroundings. A much more harmonious result would be obtained if, instead of using a black mask for the slide, a semi-transparent one were employed; thus we could produce on the screen somewhat the effect of a print mounted on a grey mount. This will, of course, require a little more care and trouble than ordinary lantern-slide making, but, thanks to commercial gelatine lantern plates, the operation of making lantern-slides has become so simple that few will grudge the little further trouble involved in improving on the present crude form that so universally obtains.

"The method we propose is, in printing the lantern-slide, to use an opaque mask exactly the same size as the aperture of the mask that is intended to be mounted with it, so as to prevent any part of the picture showing through the semi-transparent mask when the picture is projected on the screen. Care must be taken, in mounting the slide, to ensure the cut-out part of the mask registering *exactly* with the edges of the picture. An opaque mask with an opening somewhat larger than the opening of a semi-transparent mask should also be used, so as to give a suitable shape to what may be called the mount of the picture.

"As an illustration, suppose it is intended to make a lantern picture measuring 2½ in. by 1½ in. Take an opaque mask with an aperture exactly this size, and place it between the sensitive lantern plate and the negative in the printing frame (if it is intended to make the slide by contact); the mask and the lantern plate should be adjusted so that the picture will be in the middle of the lantern plate. When the slide is developed there will be a clear margin all round the picture. Now if we take a semi-transparent mask with an opening exactly the same size and shape as the opening of mask that was used in printing, it can be easily fixed so that the margins of picture exactly coincide with the cut-out mask. The next operation is to adjust an opaque (black) mask with a larger opening than the transparent mask, say 3 in. by 2 in.; we then have a picture 2½ by 1½, with a semi-transparent margin all round it of a quarter of an inch, and when the picture is projected on the screen the grey margin produces a much more pleasing effect than if the bright picture is in sharp contrast with intense black."

West Surrey Society.—The first public lantern evening of the season was held at headquarters on 16th inst. There being no charge for admission, a large muster of friends was recorded, notwithstanding the wet weather. A very fine collection of transparencies was passed through the lantern, explanations being given by Mr. Davison. The slides were contributed by Commander Gladstone, R.N., Messrs. T. W. Bright, H. L. Andreæ, Martin, Graham, A. R. Berry, F. W. Berry, J. S. Bond, and others. As was expected, this proved to be the most successful public evening that the society has ever held, and the committee feel so much encouraged that they intend to continue the series of free public evenings at intervals during the winter months. The lantern was kindly lent and worked by Mr. F. W. Berry

DOLLOND & CO.,

35, LUDGATE HILL. Branch—62, OLD BROAD STREET,

MANUFACTURERS OF

Optical Lanterns and Slides.

SPECIAL COPYRIGHT SETS FROM ORIGINAL DRAWINGS.

SPECIAL SET FOR TECHNICAL EDUCATION

The "BUSY BEE."

Forty-five Slides, complete, with Lecture.

DOLLOND'S "DURO" CLOTH LANTERN SLIDE BINDINGS

LAST LONGER AND LOOK NEATER THAN ANY OTHERS.

GROSS BOXES, 1s.

"LOTHIAN" SPECIALITIES.

THE "LOTHIAN" OPTICAL LANTERN. Unique design, for Oil or Limelight.

THE "TODD-FORRET" MAGNESIUM FLASH LAMP. (Patent.) Pronounced by experts to be the best in the market. 13s., post free.

THE "LOTHIAN" ETCHING PLATES. For making Diagrammatic Lantern Slides, brown, blue, and obscured.

Write for Particulars. Catalogue—New Edition

The "Lothian" Combined Masks and Binders, ready gummed, assorted box, 1s. 2d. post free.

PLATT & WITTE,

Manufacturers of OPTICAL LANTERNS and PARTS,

ALSO

BELLOWS and CAMERA FITTINGS in Brass and Aluminium.

CATALOGUES FREE. DESIGNS WORKED OUT.

BIRKBECK ROAD, RIDLEY ROAD, HIGH STREET, KINGSLAND LONDON, N.E.

ARCHER'S Lantern Novelties.

NEW SET OF SLIDES: **SLUM LIFE** IN OUR GREAT CITIES. Direct Photographs from Life in the Slums. Splendidly done. Complete, with Reading by the Photographers, Price 54s. the Set of 54 Slides, Now Ready. Reading alone, 6d., Post Free. Sample Slide, Post Free, 1s. 4d.

Liberal Terms to the Trade.

The UNILUX Patent Bi-Unial Lantern, Two Lanterns in One (with only One Light), Now Perfected, and will be Ready for Sale Shortly, fitted with Beautiful Rolling Curtain Effect, Panoramic Form.

The "IDEAL," the Lantern of the Future!

New Catalogues Shortly, with Full Particulars, also many other New Slides and Apparatus, Post Free One Stamp.

ARCHER & SONS, Patentees and Manufacturers,

43 to 49, LORD STREET, LIVERPOOL. (Established 1848.

The "DORE"

FOR

LANTERN SLIDE PRINTING BY CONTACT.

No Dark Room complete without it.

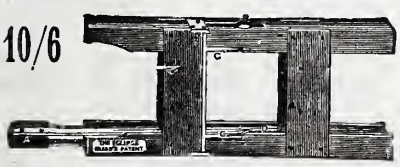
¼-plate, 5/6; ⅓-plate, 7/6 1/1-plate, 10/-; well made in mahogany;

of J. DORE, SANDOWN, I.W.,

OR ANY DEALER.

BEARD'S "ECLIPSE" SINGLE LANTERN SLIDE CARRIER.

10/6



The most efficient Single Lantern Carrier extant.
Brings used Slide back to same side as put in.
No Blank Screen; approaching dissolving.
Works entirely from one side.
Beard's REGULATORS for perfectly controlling Condensed Gas. Made to fit any maker's Cylinders, **30s.**

First Class Medal Awarded, 1891, Royal Cornwall Exhibition.
Lanterns and Accessories made to order Cylinders, Gauges, Keys, etc.

R. R. BEARD, 62, ALSCOT OAD, BERMONDSEY. *To be had at any Optician's*

FOR SLIDES AND COLOURING

SEND TO

FREDERICK J. STEDMAN,

174, Bridge Road, Battersea, London, W.

PRICE LIST FREE. **Orders executed in rotation.**

SLIDE PAINTING COLOURS,

SPECIALLY PREPARED FOR PAINTING MAGIC LANTERN SLIDES.

IN COLLAPSIBLE TUBES AND GLASS POTS.

Boxes fitted with Varnish Colours, 5/, 10/6, 15/. and 30/ each.
Boxes fitted with Water Colours, 2/, 5/ and 21/ each.



JUST PUBLISHED.

"A Manual on Painting on Glass, and How to Use the Magic Lantern."

1s. each.



ALSO MANUFACTURERS OF THE

NEW CHROMO PRINTED MAGIC LANTERN SLIDES.

5s. per Set. 12 Slides. 80 Subjects.

New Lists Just Ready. Post Free.

J. BARNARD & SON, Manufacturing Artists' Colourmen,

RETAIL, WHOLESALE, AND EXPORT,

19, BERNERS STREET, LONDON, W.

ENGLAND'S LANTERN PLATES

SLOW OR RAPID, 1s. per doz.; post free, 1/3.

Coated on Specially Thin Glass.

J. DÉSIRÉ ENGLAND,

22, CHARLES ST., ROYAL CRESCENT, NOTTING HILL, LONDON, W

Sold by all Dealers.

WORMALD'S NEW LANTERN SLIDE PRINTING FRAME.

WRITE FOR PROSPECTUS.

LANTERN SLIDE BINDING STRIPS

MASKS and Stereoscopic Masks & Binders.

Superior to all others.

WHITE SPOT LABELS.

WORMALD, SUTTON, Surrey.

"PARIS PHOTOGRAPHE,"

Monthly Illustrated Review

OF PHOTOGRAPHY, & ITS APPLICATION TO ART, SCIENCE, & INDUSTRY

Director: PAUL NADAR, 53, Rue des Mathurins, 53, Paris.

SUBSCRIPTION { Paris One year 25f. / Abroad ,, 26f. 50c. / Postal Union ,, 28f.

Price for One Number, 2f. 50c.

General Office of Photography

PARIS: 53, Rue des Mathurins. **NADAR.** Telegraphic Address: NADAR, PARIS.

English and French Cameras, French and Foreign Lenses, Films of every Description, Roll Holders, Printing Papers, Albumenised Paper, Slides, Dishes, Lamps, etc.

"L'EXPRESS DETECTIVE," NADAR.



J. A. RESTALL,

JEWELLER AND SILVERSMITH,

3, St. Martin's Place,

BROAD STREET, BIRMINGHAM.

MANUFACTURER AND MEDALLIST to over 900 Clubs, Societies, Exhibitions, etc.

Designs prepared, Dies cut and Medals struck for Photographic Societies at specially low prices and advantageous terms.

THE LANTERN

THE essential parts of an optical or projecting lantern consist in a luminant, a condenser, a slide stage, and an objective.

The English method of adapting these to each other has undergone very little modification or improvement for the past twenty or thirty years or more—in fact, the stereotyped design of English magic-lantern is just about what it always was, only there is a little more show about t now. In the best lanterns—that is to say, the most expensive instruments—there is usually an elaborately-polished brass slide-stage with a spring plate, which is always clicking and making a noise when used, and a crowd of brass studs and milled heads, etc. To the inside of this polished brass slide-stage is attached a socket for the condenser, and on the outside are a series of telescopic brass tubes, all beautifully polished and lacquered, for supporting the objective. Now, these telescopic brass tubes ought to be sufficiently rigid at their greatest extension to support the objective in the optic axis of the condenser but the fact that they are very rarely so and that, on the contrary, they are nearly always rickety or dropping, is well known to all lanternists of experience, and this, too, is admitted by the various more or less elaborate mechanical contrivances that have from time to time been introduced to secure the desideratum.

Polished brass fronts are defective or expensive—very often both—and contribute no more light to the screen than an equally well polished brass bedstead would.

That we have adopted a simpler and more efficient slide-stage and objective holder every lanternist will admit, sooner or later. By dispensing with expensive absurdities we have not only increased the efficiency and reduced the weight and bulk, but are able to provide the more perfect optical system, viz., 4½ in. triple condenser, interchangeable objectives of various foci, specially constructed for projection, a properly constructed jet holder and jet with mechanical adjustments in every direction (not the unmechanical tin tray and pin which was never known to fit), and all this we can supply for less than half the price of other instruments intended for the same class of work.

Lantern Catalogues, 3 stamps.

W. I. CHADWICK,
2, St. Mary's Street, Manchester

FIRST-CLASS PRINTING IN SILVER, PLATINOTYPE, AND BROMIDE,
AT LOW CHARGES.
Amateur Photographers desirous of obtaining the best results from their negatives should send for our price list (sent post free) and specimen print.
Best work only, and moderate charges.
Retouching, Copying, and Developing at Trade Prices.
Photographic Lantern Slides prepared.
Send for Price List.
Address: Photographic Studio, Swanley, Kent.

WHEELER'S PHOTO HELPS.
PHOTOGRAPHIC ENLARGEMENTS: How to make them. 130 pages, paper 1s. Cloth 1s. 6d.
INTERCHANGEABLE ALBUMS. 5 sizes.
ANTI-HALATION PAPER. In boxes, ¼-pl. & ups.
PHOTOGRAPHIC BLOTTING BOOKS. 8 sizes.
EXPOSURE REGISTER AND TABLES, 1s. & 1s. 6d.
GELATINO-CHLORIDE BACKING PAPER, all sizes
BROMIDE PRINTING REGISTER. Cloth, 1s.
MODERN PHOTOGRAPHIC LABELS. Best out, 6d.
NEGATIVE PRESERVATIVE PAPER. All sizes.
CELLULOID STORAGE CASES. 2 sizes. Cloth.
READY MARKED LANTERN SLIDE MASKS
BINDERS THAT WILL STICK. 1s.
PHOTO-PRINT CASES. Ch. pure. 3 sizes.
THE DEALERS, or GEO. WHEELER & CO.,
46, King Street West, Manchester.

DRY POWDER DEVELOPER (PATENTED)
In weighed powders for 4 quarter, 2 half, or 1 whole plate. Invaluable for Tourists. No trouble, no glass, no deterioration. Perfect for Dry Plates, Bromides, Opals, and Lantern Slides.
In compact boxes, 1/-, by post 1/2; & 2/6, by post 2/9. A sample will be sent on receipt of stamped addressed envelope. Retail of all vendors of Photo Goods. Wholesale of Messrs. JOSEPH LEVI & CO., 40, Furnival Street, Holborn, London, E.C., and the Inventor,
W. OLDHAM, ETON, WINDSOR.

GROOVED BOXES FOR STORING LANTERN SLIDES.
MADE OF STOUT CARDBOARD.
To hold 25 Slides, 5s. per doz.; 48s. per gross.
,, 50 ,, 9s. ,, 90s. ,,
Orders for 1 gross and upward carriage paid.
G. W. WILSON & CO.,
2, ST. SWITHIN STREET, ABERDEEN.

BREAKFAST—SUPPER.
EPPS'S
GRATEFUL—COMFORTING.
COCOA
BOILING WATER OR MILK.

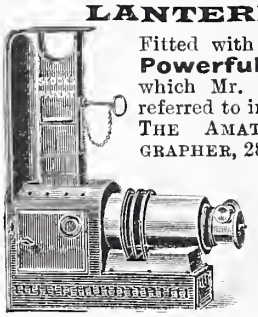
H. HUGHES & SON,
The New London Photographic Stores,
THE AMATEUR'S COMPLETE SETS.
¼-Plate, 35s.; ½-Plate, 70s.; 1/1 Plate, 100s.
NEW INSTANTANEOUS SET.
¼-Plate, 60s.; ½-Plate, 120s.; 1/1 Plate, 180s.
OUR COLONIAL OUTFIT.
Best Apparatus, packed complete for shipment
½-Plate, £18; 1/1 Plate, £28.
All Apparatus, Chemicals, etc., guaranteed.
Dark Room for use of Customers.
DETECTIVE CAMERAS, 1891.
The Presto Camera, 10/6; The Guinea Hand Camera, 21/-; The Hand-Camera, 26/-; also the Kodak, The Facile, the Radial, and other new and approved patterns.
NEW ILLUSTRATED CATALOGUES POST FREE.
59, Fenchurch St., London, E.C.

"APTUS"
WASHABLE CLOTH LANTERN SCREENS.
8 feet by 8 feet, in one piece, mounted on Rollers top and bottom. 15/0.

"APTUS"
OPAQUE LANTERN SHEETS.
Large Dimensions.
These Sheets are prepared with a special flexible, waterproof material, perfectly white and opaque. The prices include 3-inch Roller, Batten, Cord and Pulleys.
PRICES.

9 ft. by 9 ft.	25/0	14 ft. by 14 ft.	56/0
10 ft. ,, 10 ft.	31/6	15 ft. ,, 15 ft.	67/6
12 ft. ,, 12 ft.	42/0	16 ft. ,, 16 ft.	73/6

Sample on application.
To be had from all Dealers, or from
SHARP & HITCHMOUGH,
101 & 103, Dale Street, Liverpool.

STOCKS' COMPACTUS LANTERN,

Fitted with his **Patent Powerful Oil Lamp,** which Mr. J. A. Hodges referred to in an article in THE AMATEUR PHOTOGRAPHER, 28th Oct., 1892.
WONDERFULLY COMPACT.
Send for Full Particulars.
W. STOCKS, RYE.

NO MORE TORN PRINTS
BY USING
FIRTH'S
Double Syphon Print Washer.
Only a small stream of water required.
Wholesale: MARION & CO., LONDON; and all Dealers.

JOHN DONE & CO.,
Photographic Printers,
Have the most complete Works for Silver Printing in the Country, and give special attention to Amateurs.
ENLARGEMENTS ON PAPER AND OPAL.
LEWISHAM HOUSE WORKS,
WOODVILLE RD., NEW BARNET (nr. LONDON).
Price Lists free on application.

PHOTOGRAPHIC, SCIENTIFIC, AND MISCELLANEOUS PROPERTY.—Mr. J. C. STEVENS' SALES BY AUCTION of Miscellaneous Property of every description take place nearly every FRIDAY. Lists for Catalogues should be sent at least a week before the sale.—38, King Street, Covent Garden, London, W.C.

Gelatino-Chloride Paper.

By "Enterprise."

My experience with gelatino-chloride printing paper has been somewhat varied, having worked with various brands and numerous formulæ.

I started some two years since with "Celerotype," using the ordinary toning (borax) bath, did fairly well with it, but found much difficulty in mounting them. For some time I abandoned its use, but when the Ilford P.O.P. came into the market, and hearing such good reports on it, I was induced again to try it. I worked this very successfully for some time, toning with the sulpho-cyanide bath, until the supply was stopped for the laying of new machinery.

Whilst anxiously waiting the re-issue of my then favourite paper, I tried a few packets of Jacoby's, got fair tones, but generally impure whites, and it has apparently too much gelatine on its surface, which renders it more difficult to mount. When P.O.P. was again on the market I had a supply, but found it not identical in working to that I had previously—two faults, viz.:—(1) The purple colour to which it prints does not redden enough in the preliminary washing, which is detrimental in watching the tone; you think you have a grand tone, but when putting into the fixing bath you are grieved to see this turn to a sickly yellow colour. While I admire the colour for first proofs, yet it is a drawback for toning. (2) The film of gelatine partially and wholly leaving its support during washing manipulations. I took all the usual care with waters of nearly even temperature—alum bath, salt and water after toning, etc.—but in spite of all precaution I could not avoid blisters. At this stage I felt almost defeated in the use of gelatino-chloride paper. Now the Eastman paper was the last I resolved to try, though my first experience with this was not altogether satisfactory, viz., for want of a suitable toning bath, the sulpho-cyanide bath resulted in patchy toning, the borax too blue and flat, the combined bath impure whites and unstable action, and doubt as to its permanency. About this time Mr. Welford's carbonate bath formula appeared in your journal, which I thought would be a rather expensive one, especially when I read it "won't keep," nevertheless I resolved to try it, but made up the formula with double the amount of water given. This I found toned plenty fast enough. Having only a small batch, I ventured to try the experiment of "keeping." I have toned ten or twelve batches of prints with same bath since, only replenishing by adding a small quantity of gold about five minutes before use, and this is the last tone it yielded (print enclosed; Editor, please note), which is of a rich purple blue which is very pleasing.

This is not the only tone that can be obtained; warmer tones, and even the blue-black tones can be obtained. I do not know how long this bath will work; its only objection now is the colour of its bulk, which is of a deep claret, and is a little detrimental in watching the stage of toning. I intend now of using the old bath as a part bulk for a new one.

With regard to gelatino-chloride paper, I think the photographer has in his hand an article which suits his every requirement for general work. He can finish with ease as with ordinary albumen paper, or with a glass-like surface, or with a beautiful matt surface, almost resembling platinotypes; he can suit the finish as his subject requires.

A word or two as to my method of working, and I have done, viz. Having the batch I intend to tone in my left hand, and my porcelain dish filled with water in front of me. I proceed. Taking the prints separately by the corner, I place them in the dish (face down), holding each one under water for about one second until I have all in. By this time it will be time to throw away the first washing water; then give five or six more changes of about four or five minutes each, then tone, return to the same water again, then use alum bath, rinse well again in water, then fix in hypo three ounces to one pint of water for twelve or fifteen minutes, then frequently change the water from fifteen to twenty times for four or five hours. As a mountant I like a gelatine mountant in preference to starch. All prints should be quite dry before proceeding to trim and mount. For backing the glaze-surface ones, I prefer a heavier paper than the waterproof paper usually sold for the purpose; say ordinary note or cartridge paper. I squeegee the print on to "enamel plate" or "matt opal," as the finish is required in their rough sizes. When partially dry put on the backing papers about one-eighth of an inch smaller than the prints, allow to dry, when they will fall off, or strip easily; trim and mount. If prints are for frames, "cut-out" mount with picture pasted behind looks well. I find the Eastman "Solio" paper the hardest surface I have as yet tried.

To mount, place the print face down on a clean piece of paper (newspaper, or old journals will do, providing they are some months old and the printing is well dry), place the thumb and two fingers firmly on the centre of the print to avoid any slipping, first paste the edges well, then remove the fingers to one end a little in order for the centre to be pasted; avoid using too much mountant, and that same is free from grit of any sort; take gently by the edges, place in position on mount, place a sheet of non-fluff blotting paper on the face of it, well rub on mount with the hand. If you find any part of the edge of print not in contract, moisten a pad of cotton wool and rub down. I think if any of my brethren wishes to try gelatino-chloride paper, and follow above directions, he will be pretty successful with it.

A New Process for Photo-Dyeing.

By A. Villain.

At one of the last meetings of La Société d'Etude, while experiments in photo-dyeing were being made under the eyes of the members, M. Villain passed in review all the known different processes which give coloured photographic prints by the medium of dyes. He spoke of the process by imbibition, and of the processes of Kopp, Philippe, Willis, Green, Feer, etc., and called attention to the little stability to light of certain prints obtained by these processes. He mentioned M. Philippe, who in his patent admitted "that the only perils to be feared were the emanations and the acid contacts, as under this action the sub-chromates of chrome and copper tend to deoxidation and to the forming of greenish salts; aniline black and the subsalt of violaniline in slowly absorbing the acid also become green, and the general appearance of the prints becomes disagreeably darker." As to the processes using dye-woods, and the derivations of aniline, such as fuchsine, eosine, violet-methyl, etc., their want of stability is well known. The great objection to the primuline process of Mr. Green is that it always gives yellow backgrounds and false tints. Mr. Feer has avoided these tinted backgrounds and has obtained shades more solid to the light and not running in the washing. After having spoken of the processes with the salts of iron, or uranium, etc., M. Villain gave the following description of his process:—

I took for a basis the experiments of Kopp, but this process may be nevertheless recognised as new, as certain products date only from a few years, some even from a few months. I use as the sensitive salt bichromate of ammonia, to which I add some metavanadate of ammonia, a salt which gives me a more energetic mordant. I steep a sheet of paper or a piece of tissue in a solution composed as follows:—

Water	1,000 c.c.
Bichromate of ammonia...	50 gram.
Metavanadate of ammonia	5 ,,

I allow to dry at a low temperature and away from all white light. I afterwards expose under a negative, and after an exposure which varies according to the nature of the negative and the condition of the light, I withdraw my print, when all the details appear clearly defined. I then thoroughly rinse so as to completely eliminate all traces of the non-fixed chrome salt. In this state the print may be dried and preserved, and it will suffice to steep it in warm water when dyeing is to be performed. I place the well-rinsed print in the dyeing bath, which I bring to a boil, which temperature it is necessary to maintain from ten to fifteen minutes. I thoroughly rinse, and if the whites are not entirely pure I pass my print in a warm bath of carbonate of soda or in a cold bath of chloride of lime, to which a few drops of chlorhydric acid have been added. I again thoroughly rinse and the print is finished. The colouring products used are for the most part derived from anthracene, and you will pardon me if I only designate them by their common names, as most of them consist, in chemical terms, of at least from twenty-four to twenty-seven letters, as, for example: the dioxyanthraquinone-quinoline, or alizarine blue S.

These products are, therefore: artificial alizarine; propurpurine; alizarine blue S.; alizarine black S.; alizarine black R.; galloflavine; purpurine; anthracene blue; alizarine orange; ceruleine S.; galleine; alizarine green; alizarine yellow; alizarine maroon, etc.

All these products may be mixed and thus give a very varied scale of shades. All the tints thus obtained offer very great resistance to the action of the light, of the alkalies and of the acids. These different products only becoming fixed in the parts in which is found some fixed mordant, and according to its concentration, it follows that the portions not impressioned by the action of the light will yield whites unless impure products have been used, or some errors committed, either of having neglected to fill the frames in red light, or of not having waited for the complete elimination of the non-fixed chrome salt. But these prints offering great resistance to the chemical actions, we may, by steeping them when finished in a solution of chloride of lime, succeed in obtaining perfect whites. The quality of the tissues, and especially of the papers, has a great influence as these products are also fixed by the action of the mordant of aluminum of iron, of copper, and other metallic pro-

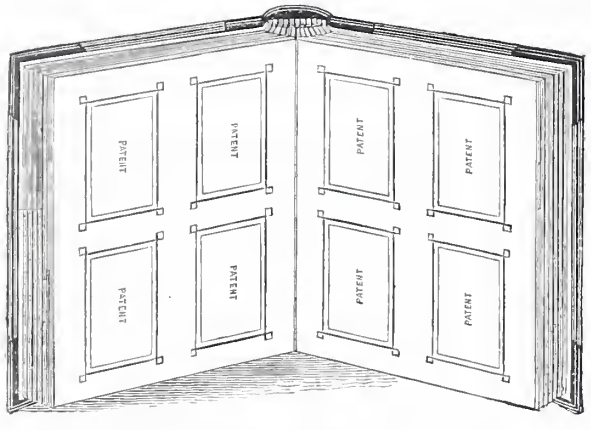
ducts, and give different tints. It was in this matter that I was enabled to obtain with paper loaded with aluminum and chrome, two different tints with alizarine black. In the places where the light had converted the chrome salt into a mordant I obtained black, and in the places not so affected a pinkish-grey. I advise also not to dry the paper or the tissue impregnated with the chrome salt at a temperature higher than 25 deg. Centigrade, as at 30 deg. transformation already begins and shows itself by colouring the whites and fogging, so to speak, the image.

The applications of this process may prove to be very numerous, and I hope to arrive at a rapidly fixing enough mordant to obtain prints by enlargement, and not only screens but veritable hangings. The cost is not very great, as for three or four francs it is possible to dye from ten to twelve kilos of tissue or paper, which represents about from 1,500 to 2,000 prints, 13 by 18 centimetres. The experiment made with photo-dyeing has demonstrated the simplicity of this process and the correctness of the above.—*L'Amateur Photographe.*

Apparatus.

THE BLACKFRIARS ALBUM.

THE Blackfriars Photographic and Sensitising Company are placing a capital album on the market. The one sent us has places for four quarter-plate prints on each sheet, and the prints



are slipped into their places, not stuck in, thus obviating any chance of spoiling the surface of the prints from the mountant, or of soiling the mounts. Another advantage too is that prints may be easily removed and fresh ones put in their place.

Catalogues.

MESSRS. WILLIAMS AND NORGATE, 14, HENRIETTA STREET, COVENT GARDEN, have sent us a very complete and useful catalogue of foreign works on mathematics, astronomy, photography, physics, optics, technology, etc., which will be found extremely useful to all book buyers and librarians.

Review.

A Scamper through the States. Published by the Polytechnic, 14, Langham Place, W. Price 1s.

The Poly, as it is usually called, has organised a trip to Chicago, and this work forms a handbook to the World's Fair, 1893. It is well compiled and will be found very useful, and being illustrated with over 120 illustrations, is well worth getting. The Poly trips to Chicago and back are worth looking after too; twenty-five guineas inclusive is not dear.

Holiday Resorts and Photographic Haunts.

TO ARCADIA WITH A CAMERA.—V.

BY LIEUT. G. HARVEY.

SINGLETON is a picturesque village in a valley of the South Downs. It has its railway station (London, Brighton, and South Coast Railway), and boasts six trains per diem. I would advise the camera man to make his head-quarters at this place, unless he be prepared to make his bed in a haystack with his camera for his pillow, as once outside this parish nothing short of a miracle will find you safely housed when night casts his mantle over the earth. There are many pretty cottages and views to tempt the photographer, and if studies of farm life be in request, then these can be had *ad lib.* Notice the tower of the church, which is very old. The reredos of alabaster is certainly worthy of a plate, for simple though it be it is extremely effective as a work of art. Also give the interior (as a whole) a plate. The pulpit is in a most singular position, approached through a rood-loft gallery, and will be an interesting souvenir. Levin Down (558 ft., ¾ m. N.E.) is a hill worth climbing; and if the photographer cares to mount the opposite hill (1 m. E.), he will obtain a fine view of this very striking eminence. Seen from that, Levin Down exhibits a most effective profile, and makes a bold picture. I do not advise a visit to West Dean unless one is in quest of a symphony in stucco, but if he be so desirous, a walk of three-quarters of a mile will take him to West Dean church, where he will be able to satisfy his hunger. One of the bells is dated 1901—rather a stretch of imagination on the part of the caster! I photographed it for the sake of curiosity. I thought if I died before that date it would be a sore puzzle to the next generation. At Cocking descend into the valley of the Rother. The scenery along the top of the Downs for seven miles E. and W. of Cocking is very grand—unequalled in the South of England, the inhabitants tell me, and I do not doubt them. It is a thousand pities that accommodation is so very difficult to obtain here. Personally, I should have been in a sorry plight had I not remembered a military man who had a house here. Do not then come here with the idea of finding rooms, because you won't get them. Conveyances are also at a discount, and the roads execrable. On the hill above Treyford are five large barrows which deserve a visit, not only for their own sakes, but for the views obtainable therefrom. A walk or ride on horseback (if the latter, be sure and carry films) from Beacon Hill, near Treyford on the west to Duncton Beacon on the east, a good nine miles, affords a glorious panorama, changing at every mile. The road is barely passable, but do not let that detain you. Boots are not scarce, and such a series of beautiful landscapes are not to be found everywhere. At Verdley Coppice there once existed (1 m. E. of road) a hunting tower, mentioned here by the name of Verdley Castle. The pathway to the site is a good one, but, unfortunately, very difficult to find—much less to describe. It lies 150 yards south-west of the letter S, in the word "Survey," on the *new* Ordnance map, amid woodland scenery of great beauty. The local Goths utilised the remains of the tower for mending the roads of the neighbourhood. Fine view from Henley Hill adjoining Verdley. Two miles west of Henley Hill, near a place called Pigeon Hill, there is one of the most magnificent views in England. Fernhurst ("the wood abounding with ferns") is a charming place. Shulbrede Priory lies 2 m. north-west. It was an Augustinian Priory, founded early in the thirteenth century by Sir Ralph de Arderne, but is now the property of the Earl of Egmont, and is used as a dairy and cottage. The Priors' room is still an interesting feature, and on the walls are various rude paintings and legends of more than one date. Notice the royal arms. They are more modern, seemingly temp. James I. The women adjoining are in Elizabethan costume. You can gain access if you apply. Two miles east of Sussex Bells, from the top of Black Down, a most magnificent expanse of country is visible. The late Lord Tennyson had a house here. The view to the east includes Beachey Head.

Exhibitions.

Society.	Entries close.	Opens.	Closes	Address of Secretary.
Camera Club	—	Oct. 17	Dec. 8	G. Davison, The Camera Club, Charing Cross Road, W.C.
Stanley Show...	Nov. 5	Nov. 18	Nov. 26	H. Smith, 29, Finsbury Pavement, E.C.
South London	—	Nov. 24	Nov. 26	Chas. H. Oakden, 51, Melbourne Grove, E. Dulwich
Exeter Amateur Photo. Soc.	Nov. 12	Nov. 24	Nov. 26	Rev. J. W Sparshatt, Fairfield House, Alphington Road, Exeter
Tunbridge Wells	Nov. 14	Nov. 23	Nov. 24	J. Chamberlain, 14, Calverley Park Gardens Tunbridge Wells.
North Middlesex	—	Nov. 23	—	J. McIntosh, 14, Lowman Holloway, N.
Phot. Soc. India	—	Dec.	—	Calcutta.
Phot. Soc., Ireland	—	Dec. 9	—	J. H. Hargrave, B.A., etc., 3, Newtownsmith, Kingstown, Dublin.
West London	—	1893. Jan. 10	—	Lionel C. Bennett, 30, Blandford Road, Bedford Park, W.
Louth	—	Jan. 26	—	S. Francis Clarke, L.D.S., 8, Upgate, Louth.
Holborn	—	Feb. 18	Feb. 20	F. J. Cobb, 3, Albion Grove, Barnsbury, N.

BRIXTON AND CLAPHAM CAMERA CLUB.

THE work exhibited by the members of this club, which is only about three years old, is certainly of high standard. The exhibition was opened by Dr. Reynolds (the President) in a few well-chosen words. In No. 5, "A King's Pyon," Mr. C. F. Palmer has a pretty bit, but printed far too heavily; 18, "Stormy Weather," by W. Thomas, is a fine effect, but still a little too black to be true; 31, "Old Mill, Cassiobury," by C. F. Palmer, is again a pleasing little bit, and 37, "In Cool Waters," by J. H. Edwards, is simply spoilt by the absence of clouds; 40, 41, and 42, Exeter Cathedral interiors, by H. H. Willoughby, are really good work. C. F. Archer, in 53 to 57, shows that it is not necessary to travel far afield to find artistic bits, the Crays supplying him with good material. 65, "Ely," by T. Buck, is noticeable from its drunken architecture; 70, "Grindelwald," by F. Goldby, is a fine bit of work. We really had to wonder why 83 was hung; it is neither artistic nor curious, being merely a common bath-room. In 92 Mr. F. Goldby deservedly takes the bronze medal with another of his Swiss scenes. In 96, "Clouds," J. H. Edwards makes a bold attempt, and 152, by the same worker, is worth noting. Nos. 149 to 154, Zulu scenes, by J. H. Edwards, again have special ethnological interest. In 160, F. W. Grant has two good studies, though a little black. 174, by W. Thomas, is almost Robinsonian in style, and the frames 183, 184, and 185, by the same worker, are excellent little shots, beautifully printed. 193, "While the City Sleep," by R. G. F. Kidson, is a bold attempt, but not quite true in tone; 196, T. J. Bartrop's study of Sty Barrow Crag, is good; 232, "Eynesford," by C. F. Palmer, merely wants clouds to be a good thing. In Enlargements, C. F. Archer takes silver medal with a very nice soft result, 257, "Interested;" and F. Goldby runs him hard with a bronze medal for 271, "Via Mala." There was a small exhibition of apparatus by Marion and Co., Soho Square, including the Radial hand-camera, the Perfection camera, and specimens of work done on their well-known plates. Messrs. Hill Bros. show Cresco-Fylma, and Mr. Butler, a member, shows some capital stereo slides.

THE HACKNEY PHOTOGRAPHIC SOCIETY.

In our last issue we noticed the novelties exhibited in the apparatus division, and we shall now deal with the pictures.

The appearance of the exhibition as a whole was exceedingly attractive, and the executive certainly deserved great praise for the admirable manner in which they had done their work. The bright colours of the flags and banners above the pictures was, however, a little distracting to people of quiet tastes, and rather tended to divert attention from the pictures themselves.

Dealing first with the work of members of the Society, we found in Class A, "For pictures taken since the last exhibition," no less than seventy-five pictures entered. Mr. Houghton's prize went to J. Carpenter for two very pretty flower studies, "Cornflowers" and "Cypripediums;" W. L. Barker taking Mr. Potter's prize with No. 65, "Returning;" the silver medal going to S. J. Beckett for No. 16, "Sunrise on the Fjords," a heavy-looking print of an unpleasant brick-red colour. W. Fenton Jones (Hon. Secretary) showed several pleasing views of Manxland. W. L. Barker had a very delicately treated landscape, called "Iford Bridge," which surely must have escaped the judge's attention. In Class B, S. H. Barton took the silver medal with what we consider the best picture exhibited, No. 97, "Loch Long," but his companion picture, "Evening," was rather heavy. The bronze medal went to W. Wesson for "Yachting on the Bure." J. O. Grant is to be complimented for No. 96, "Winter;" the leafless trees and the foggy atmospheric effect, at this season so familiar, have been well rendered. W. Hensler took the silver medal in Class C, "Pictures taken at club outings," for 113, "Eynesford," a delicate silver print; but we liked No. 112, by the same exhibitor, even better. The bronze medal went to J. O. Grant for No. 136, "At the Zoo." In Class D, "Portraiture and genre," there were some good portraits, notably one of Captain Abney, by Robert Beckett. G. Hankins took the silver medal for 193, "Wood Nymphs," a charming little quarter-plate study in platinotype. The bronze went to S. J. Beckett for an enlargement, "A Group of Lapplanders." The lantern slides at the time of our visit were in the hands of the judges, so that we cannot offer any criticism upon them. The awards were as follows:—Class E, medals presented by the *Hand-Camera and Lantern Review*, silver, W. P. Dando; bronze, S. J. Beckett. In the next class, "Hand-camera work," medals presented by *Photography*, we had some difficulty in inspecting the exhibits, owing to their being squeezed up into the corner of an alcove. There was, however, some very good work shown. W. P. Dando took the silver, and G. Hankins the bronze. In Class G, "Animal life," J. O. Grant took the silver, and S. H. Barton the bronze, the former for an effective sheep study on rough bromide, and the latter for 239, "A Collie's Head." We are glad to note that there are some stereoscopic workers in the Hackney Society, and some clever ones too. T. Horne Redwood took the silver, and W. L. Barker the bronze. F. Houghton's slides were too red in tone.

Turning to the open classes, we found in Class K some well-known exhibitors represented. There were, as usual, several pictures entered which had previously received distinction, although the rules distinctly barred such work. The gold medal was withheld, presumably on account of the paucity of the exhibits, there being only fifteen competitors. The silver was awarded to F. Seyton Scott for 296, "Kew Gardens," a beautiful picture with a subtle effect of atmosphere not often seen in a photograph. A landscape, No. 335, by C. B. Lewis, was bracketed equal with 296, but from an artistic point of view was far inferior. J. E. Austin took a bronze medal for "Harvest-time." Mr. Horsley Hinton has, we consider, been rather badly treated. We cannot understand why such *pictures* as "Lowland Solitude" and "In April" should have been overlooked. "Winter's Requiem" we liked less; the sky appeared to overpower the landscape, and the water should, we think, have been more in sympathy with the heavy leaden atmosphere. In Class L the silver was withheld, and equal bronze awarded to 311, "Dat's my Gal.' L. Sawyer; 361, "A Hindoo Merchant," S. N. Bhedwar; and 311 "News of Battle," R. Terras. J. W. Evans, we noticed, showed a picture which has been previously medalled in one of our own competitions. The awards in the lantern-slide class were as follows:—Silver, J. E. Austin; bronze, J. Carpenter and A. Brooker; J. H. Spencer also took a bronze for stereo slides.

The Hackney Society is to be congratulated on possessing so many *working members*, who have so well supported the efforts of the Committee to make the show a success by sending in their work for competition. Notwithstanding the inclemency of the weather, the attendance has been large, and the exhibition will probably prove as great a success financially as it has been in other respects.

Gosport.—A well-attended meeting was held on the 15th inst., when the President (Rev. L. J. Matthews, C.F.) delivered the opening address. In the course of his remarks, which were illustrated by the lantern, he ably pourtrayed the advantages offered by the society to its members in the many branches of the art, and hoped that it would long continue to serve so good a purpose. At the close of the address there was an exhibition of members' slides by the aid of the limelight. Among the exhibitors were the Rev. L. J. Matthews, Messrs. A. Fisher, H. Fisher, S. W. F. Morrish, W. Misslebrook, and C. R. Wright (Hon. Sec.). The rules, as drafted by the council, were unanimously adopted. The next meeting will be held on December 6th, when Mr. T. E. Williams will give a demonstration in flash-light photography. Five new members were ballotted for at a subsequent council meeting, and duly elected.

Greenock (Camera Club).—On the 17th inst. Mr. H. M. Smith, of the Eastman Co., gave a most interesting and instructive lecture on "Solio Paper" to members, professionals, and friends. He also toned several prints in the sulphocyanide bath with first-class results, showing that this bath could be used equally as well as the combined bath.

Societies' Notes.

BRISTOL CAMERA SOCIETY have elected the following officers for the ensuing twelve months: President, Mr. C. Bryant; Council, Messrs. J. H. Brock, W. T. Crank, H. J. B. Davies, M. E. Dunscombe, G. A. Evans, E. Jakeways; Hon. Secretary, M. W. Dunscombe; Hon. Treasurer, G. L. Wood. Meetings held the second and fourth Thursdays in each month at 10, St. Augustine's Parade.

A SOCIETY has been formed at Woolwich, known as the Woolwich Photographic Society, with its headquarters at the St. John's School. The President is the Rev. S. E. Chettoe, M.A., and the members of the council include Dr. T. Maxwell, B.A., Rev. J. A. Drummond, B.A., Messrs. W. H. Dawson, P. Hobson, J. B. Panting, and E. G. Kimber. The Hon. Secretary is Mr. H. H. Barker, 244, Burrage Road, Plumstead. Meetings are held the second and fourth Thursdays in each month.

AS regards its membership, the Glasgow and West of Scotland Amateur Photographic Association is increasing by "leaps and bounds." At the opening meeting of the present session no fewer than five-and-twenty new members were added to the roll, and other thirty candidates are entered for election at next meeting. There are already about 250 members in the association, and if the same rate of increase continues during the session, Mr. President Taylor will have abundant excuse for being a "prood, prood man."

MR. A. F. PENRAVEN, of 10, St. Matthew's Street, has been elected Hon. Secretary of the Ipswich Photographic Society, vice Mr. Hill, resigned.

OXFORD UNIVERSITY PHOTOGRAPHIC CLUB.—The next and last meeting of the term will be held in Merton College on Monday, November 28th, at 8 p.m. Mr. J. L. Myres, B.A, Magdalen College, will exhibit slides from photographs taken in Greece. All communications should be addressed, A. Eglington, Hon. Secretary, Oxford University Club, Lincoln College, Oxford.

THE Amateurs of Walsall have decided to form a photographic society. Mr. E. A. Day, of St. Paul's Terrace, Hon. Secretary *pro tem.*, will be glad to receive the names of any ladies or gentlemen desirous of becoming members.

A PHOTOGRAPHIC CLUB has been formed called the Tyneside Geographical Camera Club, with the head-quarters at the Geographical Institute, Barras Bridge, Newcastle, and Mr. Alfred Harding as Hon. Secretary.

THE Hackney Photographic Society are to be congratulated, as at the Stanley Show they carry off no less than one gold, one silver, and one bronze medal, besides three diplomas. Well done, Hackney! Hackneyed work will soon become a synonym for the best.

Societies' Meetings.

Aberdeenshire.—The exhibits of the first competitive exhibition were arranged in the Society's rooms at 35*a*, Union Street, and the display of amateur work was decidedly good. The "Hanging Committee" have done their work exceedingly well, and the public—to whom the exhibition was open—did not fail to be most favourably impressed with the excellent collection which had been got together. A few of the workers have been unable (from various circumstances) to contribute to the exhibition, but those who have done so have certainly put their best foot foremost; and a number of the figure studies and scenes and portraits are of exceptional interest, both as regards artistic treatment and technical execution. The prints have been judged by Messrs. Ewing and Morgan, the well-known city photographers, whose awards are as follows:—Class 1 (half-plate landscapes), silver medal, L. M. Gibb, Victoria Street; bronze medal, E. L. Brown, 2, Esslemont Avenue; highly commended, E. L. Brown, 2, Esslemont Avenue; commended, L. M. Gibb, Victoria Street. Class 2 (whole-plate landscapes), silver medal, J. Milne, Devanha Terrace; bronze medal, W. Gibson, London; highly commended, W. Gibson, London; commended, J. Milne, Devanha Terrace. Class 3 (portraiture and figure study), silver medal, J. Milne; bronze medal, W. Gibson, London; highly commended, J. Milne; commended, E. L. Brown, 2, Esslemont Avenue. Class 4 (seascape and river scenery), silver medal, J. Milne; bronze medal, W. A. Hawse, Gilcomston Park; highly commended, W. A. Hawse Gilcomston Park; commended, W. T. Moffatt, Beaconsfield Place. Class 6 (enlargements), silver medal, W. Moffatt, 7, Queen's Gardens; bronze medal, W. Ramsay, Dyce; highly commended, J. Milne, Devanha Terrace; commended, J. Anderson, Cults. Class 7 (hand-camera work), bronze medal, E. T. Smith. The magic-lantern slides, of which there is a very creditable collection, have been submitted to Mr. Charles Wilson photographer, whose awards will speedily be forthcoming.

Aston (Nat. Hist.)—On the 17th inst. a most entertaining lantern exhibition was given. A large hall was used, and its seating capacity of 300 was well tested, and but for the foggy weather would have been crowded. The subject was dealt with by Mr. Townsend, of the society, who gave his experiences of a photographic trip in the Channel Isles. The slides were exceedingly good, and well merit the rounds of applause that greeted many of them. Mr. Tylar also put through the lantern some of his now famous Swiss views, while other exhibitors were the President, Mr. J. W. Neville, who showed some magnificent hand-painted natural history slides of his own production; Mr. Casson, jun., and Mr. Priddin. Eight new members were enrolled, principally for the photographic branch, and the next meeting of the photographic section will take place on Thursday, December 1st, 1892.

Birmingham (Photographers' Union).—At a meeting held on 11th inst. Mr. S. Delicate gave a most interesting demonstration on "Lantern Slide Making," which was greatly appreciated by a large audience. Next Friday there will be an exhibition of members' slides, and those who are interested in photography are invited to attend. The society is rapidly increasing in numbers.

Blackheath (Camera Club).—An ordinary meeting was held on the 15th inst., Mr. G. S. Criswick being in the chair. A demonstration on "Lantern Slide Development" was given by Mr. J. T. Field (Vice-President). The demonstrator commenced by remarking that in order to make a good lantern slide you must first obtain a good negative, as it is useless expecting to get good slides from bad negatives. He printed and developed a few slides, using various brands of plates and the following developer:—(*a*) Hydroquinone, 160 gr.; metabisulphite soda, 90 gr.; potassium bromide, 20 gr.; water, 20 oz. (*b*) Soda hydrate, 160 gr.; water, 20 oz. (*c*) Soda carb., 2 oz.; potassium carb., 2 oz.; water, 20 oz. Equal parts of *a* and *b* to produce slides with black tones, and equal parts of *a* and *c* for warm tones, with prolonged exposure, the proportions being modified according to time of exposure of slide, density or colour of negative, etc. He used an Autocrat printing frame, and exposed by opening door of dark-lamp, and holding frame at a distance of one foot from gas-flame. He pointed out that by exposing in this manner you can dispense with the back of printing frame, as no light can fall on back of slide, and this is a great advantage when it is necessary to screen the light from any portion of the negative, as by looking through the back of the slide you can see exactly where the shadow of the screen falls. The fixing bath used contained 4 oz. of hypo and 1 oz. of soda bisulphate to 25 oz. of water, and was perfectly clear though it had been in use for some weeks. He recommended the use of a clearing bath for lantern slides, especially when hard water had to be used for the other operations, the one he used himself being Edwards'. At a previous meeting of the club, Mr. Field had said that he was in the habit of developing isochromatic plates by yellow light, and to prove this he brought an exposed instantaneous isochromatic plate to the meeting, and developed it by the light of the club dark-lantern. This is a large gas-lantern with front and two sides, formed with two thicknesses of yellow medium, the front having a light area of about 2 feet by 18 inches, and sloping forwards so as to throw the light down on to the developing dish, which was placed directly in front of the lamp and within a distance of three feet, thus forming a very severe test. The plate was developed, and proved to be a perfect negative without a trace of fog, though it had been once or twice held close up to the lamp for examination. This seems to prove that a deep ruby light, which is very unpleasant to work by, is not necessary for these plates; but, of course, care must be taken to prevent an undue amount of light from falling upon the plate before it is covered with the developer. There is much more danger of fogging the plate while transferring it from the slide to the dish and pouring on the developer, than there is afterwards when the image has made its appearance. In this case the developer used was hydroquinone, which when fresh has only a very slightly non-actinic tint. With pyro and ammonia the plate would naturally be much more effectually protected.

Brixton.—Exhibition opened by Dr. J. Reynolds, F.R.P.S., who gave a short address. Lecture by C. W. Hastings. Friday: slides by F. Goldby, a member, on "A Tour in Switzerland." Slides specially made for occasion. Interesting demonstration of Cresco-Fylma. Saturday: competition and other slides. Lantern operated by B. E. Pinder, Lanternist of Club. Large attendances each evening. Silver medal for direct prints awarded to W. Thomas (1838 and 84).

Cardiff.—At the weekly meeting on the 18th inst., before a full

attendance, a number of hand-cameras were on exhibition, including the Surprise, Allen's, Kitchin's, Loman's Reflex, Anschutz, Itakit, Swinden and Earp, Ross, Key, and Pollack's patent. A large number of prints taken by some of these cameras were passed round, including a collection of instantaneous athletic photographs by Mr. Kitchin. This gentleman's home-made camera is a marvel of ingenuity, every movement being provided for, horizontal and vertical swing from exact plane of the plate, and provision is also made for a focnssing reflector. The size of plate, 6½ by 4¾, makes the instrument rather bulky, but the results obtained, considering the difficulties to be encountered, were really marvellous. At the close of the meeting a few slides illustrating the British navy, ancient and modern, were passed throngh the lantern.

Carlisle.—The AMATEUR PHOTOGRAPHER Prize Slides were exhibited here on the 11th inst., and were much admired by a very large audience. The landscape series and the figure studies of Mrs. Clarke received the most applause, but the Silver Medal pictures in the architectural section were also admired. Altogether they are a very fine lot, and are much appreciated by the amateurs of this district.

Croydon (Camera Club).—Lantern night 21st inst. There was a good attendance. The members present who showed slides were Messrs. B. Gay Wilkinson, C. Bray, H. Griffiths, H. E. Neeves, H. Maclean, A. Hirst, G. Corden, and A. E. Isaac (the last named being in charge of the lantern).

Croydon (Micro. and Nat. Hist. Phot. Soc.).—On 18th inst. a large and appreciative audience assembled to hear Mr. John Weir-Brown give an acconnt of the Photographic Convention of last July, which he attended as a delegate. A large collection of views taken by himself and other members of the Convention during the various excursions were shown on the screen. Particularly noticeable were some fine architectnral slides of Melrose Abbey, Abbotsford, and St. Andrew's, and a series of hand-camera shots of fisher life in the little village of Newhaven.

Derby.—The second meeting of the winter session was held on 18th inst., Mr. G. Walker in the chair. Mr. S. S. Watkinson read a paper, entitled "Photography and the Amateur Photographer." The author, in his opening remarks, disclaimed any intention to stand before the meeting as an authority on photography. The awkwardness of his position that evening was intensified by the fact that he had to speak before gentlemen who were recognised masters of the art, and if photographic stature were taken into account he was afraid they would require a powerful lens to discover him. The claims of photography, from an artistic point of view, were then considered. Some artists considered the death knell of fine art was sounded when the first photograph was produced, and that it was impossible to get true artistic results by means of such a mechanical science. In answer to this the lecturer said that an ounce of proof was worth a ton of assertion, for the holders of palette and brush who practised the art of photography acknowledged their indebtedness to it, also that artists were often to be seen buying photographs of farm-yard studies and broken pieces of foregronnd which are to be seen in shop windows. It was hardly fair to compare photography with painting; the latter was thousands of years old, while photography was still in knickerbockers, and photographers have every reason to believe—for there were many indications of it—that photography was on the eve of a greater development in the solving of the problem photography in natural colours. The lecture, which was much appreciated, led to a considerable amount of discussion at its close. Mr. Watkinson also passed round a number of pictures printed by various processes, those in platinotype being admired as giving the most artistic results.

Eastbourne.—An ordinary meeting was held on 16th inst.; the Rev. H. G. Jameson (the President) occupied the chair. In an interesting paper on "Enlargements," Mr. Hollway said that not every photograph was improved by enlargement. This remark applied to very many of the things they took in their hand-cameras. Charming little bits of woodland, many foreground things, very attractive when taken in as a whole and looked at as direct prints, looked somewhat clumsy and distorted if enlarged two or three diameters. He did not altogether profess to understand the reason for this, but he suspected that it was just one of those things where the operator's individuality came into play, and he was led to accept or reject a certain effect according to his impression of what might be satisfying to his æsthetic sense. Be that as it may, it was certain that to make a thoroughly good enlargement of some small picture which they had seen in nature in its natural size was a source of great enjoyment, and to his mind was likely to give more real pleasure than the long-looked-for photograph in colours—when they got it. In a really good enlargement it was possible to get all the important qualities of a direct picture, minus, of course, the extreme definition. Whether the slight loss of this quality militated seriously against the general effect was one of those questions which everyone must decide for himself or herself. For his part he thought it did not. It seemed to him that what one lost in that respect was more than compensated for by a breadth and harmony of effect which a small picture might show, but which was more likely to be wanting. Mr. Hollway, by way of demonstrating the process he subsequently described, made two enlargements from quarter-plate negatives to 12 by 10, using magnesium ribbon and a lantern made by himself, with the result that he prodnced two remarkably good pictures.

Elizabethan (Photographic Society).—A lantern-slide exhibition was given on the 17th inst. The hall was well filled. A small charge was made for admission, and the amount thus realised will be devoted to the liquidation of the cost of a lantern which the society has purchased. The lantern was manipulated admirably by Mr. Lambert Matthews. The photographs of the views shown were the work of members of the society, and in the majority of cases the slides were also made by members. The gentlemen whose work was exhibited were the Rev. D. W. Barrett (Rector), Messrs. Medland, Lambert Matthews, Baddeley, Imray, Birt Acres, A. Kemp, Herbert Milne, T. Samuels, and W. Ottaway, and excellent work it was. Arrangements have been made for members of the society to meet dnring the coming winter for practical illustrations of and experiments in photography.

Hereford.—An ordinary meeting was held on the 15th inst. Mr. Leo Richards, Aylestone Hill, was elected a member. Mr. Alfred Watkins gave a practical demonstration on "Platinum and other matt-surface printing." He explained the method of obtaining a matt surface on gelatine-chloride prints, and then demonstrated the method of salting and sensitising drawing paper, and of toning the image when printed with platinum. Some large prints, the negatives of which were taken with a pinhole apertnre, no lens being used, were shown. The Platinotype printing process was demonstrated, and prints developed by both the hot and cold bath process. Mr. Watkins also exhibited Dallmeyer's new Tele-photographic lens. The Hon. Sec. read a letter from Mr. Davies saying that, owing to an appointment he had received, he was compelled to resign his office of assistant hon. sec. The resignation was received with great regret. It was agreed to hold an extraordinary meeting on December 13th for the purpose of testing lantern slides made by the members.

Holborn (Camera).—On November 18th, Mr. H. Thompson in the chair, Mr. J. H. Avery gave a lecture and demonstration on "Development." The subject of development was one which the photographic worker must thoroughly master. How many amateurs knew how to develop a plate properly. It was the stumblingblock. What he wanted to prove that night was that in development, treated in a rational manner, they had at their disposal the means of producing in the negative something like the image they had seen on the focussing screen. Mr. Avery gave a few hints on the developing agents and on the different classes of snbjects, and in conclusion said he could give no definite method of development. Every plate required its separate development according to the different conditions under which the plate was exposed and what they required in the resulting negative. Mr. Avery developed a number of negatives and a large transparency.

Kensington and Bayswater.—A meeting was held on the 21st inst. The President (the Hon. L. M. St. Clair) presided. A most interesting lantern lecture was given by Mr. C. Dixon on "Holland House." The slides were taken from negatives made by the lecturer nineteen years ago by the wet-plate process. Their brilliancy compared very favonrably with the more modern gelatine negatives. Mr. Dixon gave a most complete description and history not only of the place itself, but also of its generations of inhabitants.

Oxford.—The prize slides of a contemporary for 1892 were shown on the 17th inst. As this Society was very early on the list this year, the slides were consequently in excellent condition. A few slides might have been omitted with advantage, but they were chiefly very good, there being some charming bits among them. The American sets were well to the front in every respect. It should be mentioned for the guidance of secretaries that there are about two dozen of the best slides on quarter-plate size, so that a carrier should be ready for these.

Lewisham.—On November 18th, Mr. B. Davidson, in his paper on "Hand Camera Work," said that photographers who would not think of using with their ordinary cameras a lens that did not cost less than £5, would often buy a hand-camera in which the value of the lens was about 2s. 6d. at the most, and yet they used it for the most difficult work, and expected good results. For some kinds of work, such as land and sea scapes, nothing could beat the single combination, but the doublet was by far the best to have, being a thorough all-ronnd tool, and could be used at a much larger aperture, which was absolutely necessary for some subjects and light. For some time he had been using a Zeiss, made by Ross, with the best results, as proof of which, numerous lantern slides were shown of the Zoo, Scilly, and the Channel Islands, etc., the detail in the rock scenery being well defined. When first taking up the hand-

camera, he had one with fixed focus, but found it of very little use. To develop, it was advisable in some cases, with very short exposures, to commence with a small amount of pyro and ammonia, with gradual additions. He generally did about four plates at a time, as they very often took upwards of an hour, and if a rocker is used they could be left to themselves for a time. When Amidol is better understood, he thought it would be found the best developer for snap shops. A hand-camera should not be used on a stand unless absolutely necessary—some workers even giving exposures up to three seconds by placing the camera on the knee—but he thought it was always advisable to carry a light tripod ready for those occasions.

Newcastle.—On the 14th inst. the occupation of the new home in the Central Exchange Art Gallery, Newcastle, was inaugurated by giving an exhibition of lantern slides by limelight. This took place in the new concert hall, where a large number of people had gathered. The exhibition was extremely interesting. There was a constant succession of pictures for more than an hour, and all of them were very beautiful. There were many local views, the river scenes and the scenes taken in the slums being particularly good. There were several sea views, among them being some very beautiful sunrise, sunset, and moonlight effects. The views of local country places were all delightful, and the photographs of flowers were exquisitely pretty. The hall proved admirable for the purpose, and the exhibition was one of the most successful which the association has held.

Phot. Soc. of Ireland.—The ordinary meeting was held on the 11th inst., Mr. Geo. Mansfield, J.P., President, in the chair. The President delivered his annual address, in the course of which he reviewed the various improvements which had taken place in the different branches of the photographic art during the last twelve months. After the address a discussion on matters of photographic interest was introduced by Mr. Ruthven, who advocated the setting apart of certain evenings during the session for similar discussions, with the object of encouraging beginners in the art to bring their difficulties before the members for elucidation and advice. Mr. Ruthven's remarks led to a very animated discussion, in which most of those present took part, and so interesting did the debate prove that it was adjourned till next meeting.

Preston.—The AMATEUR PHOTOGRAPHER Prize Slides were exhibited on the 18th inst. before a large audience, and gave general satisfaction. Instrumental and vocal music was given at intervals.

Richmond.—At the meeting on the 7th inst. the first lantern show of the season took place, when a very large number of slides were projected on the screen, among them an interesting series of Ceylon scenery and customs by Mr. S. D. Gibson. Messrs. Alabaster, Ardaseer, Harris, Hunter, Davis, Perry, Ramsay, Baron, and others also showed some of their latest productions. On the 14th inst. Mr. F. P. Cembrano, jun., in the chair, the paper announced for the evening had to be postponed, as Mr. Ennis was unable to be present. Mr. Faulkner showed two prints on platinotype new paper, which had been exposed to damp. One had been developed with glycerine in the developer; it turned partly red on development, but this redness, as well as some parts of the image, had disappeared on fixation. The other print, in the development of which the glycerine had been omitted, was of good quality, the deepest shadows being of a good rich black. Both pieces of paper, before exposure and development, had had the same opportunity of getting spoilt by moisture, and he could therefore not account for the great difference in the results. Mr. Ardaseer suggested that the piece that had become bad must have been outside the roll, and had therefore protected the second piece inside. Mr. Green wanted to know the simplest way of reducing whole-plate to lantern size. Mr. Williams said he attached his camera to a baseboard, at the end of which he placed a box with an aperture in it to carry the negative to be reduced. The space between the negative and the camera he covered with a black cloth. To obtain the best results reducing should be done by daylight. Mr. Davis had tried Mr. E. G. Richardson's system of using various strands of magnesium, and although he had burnt as much as eight pieces, each one eight inches long, the transparencies were much under-exposed. The amount of smoke produced was so great that he had to clear out of his dark-room after each exposure. Mr. Cembrano said that with all its uncertainty daylight was the best, as with artificial light it was difficult to obtain evenness in the lighting. For those that had no time during the day, he would recommend using smaller plates and making slides therefrom by contact.

Wakefield.—On 16th inst. the members of the above Society had a decided treat in listening to a most interesting lecture on the cold-bath platinotype process, which was delivered before a well-attended meeting by Mr. Buchanan Wollaston, of the Platinotype Company, London. The lecturer gave full details of the process, from ordering the paper to producing the finished prints, introducing valuable hints of his own for overcoming the various difficulties which beset the path of not only the printer in platinotype but in all other processes. His remarks were in most cases illustrated by practical demonstration, and during the course of the evening he developed prints of unequal density by the various means at the command of every operator, dodging under and over exposure and other defects caused by the negatives, and in every case producing well-balanced and beautiful prints in the most masterly manner A number of beautifully-finished specimens of the process were then handed round for the inspection of the members, which were greatly admired.

SOCIETIES' FIXTURES.

Nov. 24.—LIVERPOOL (A. P. A.).—"A Glimpse of Rome in 1892," Mr. J. S. Brown.
„ 24.—OLDHAM.—"The History of a Lantern Slide." Demonstrator: Mr. J. W. Wade.
„ 28.—RICHMOND.—Annual Dinner at the "Grehound" Hotel, 7 p m.
„ 28. — NEWCASTLE-ON-TYNE. — H. P. Robinson's "Picture-Making by Photography," Mr. C. W. Hastings.
„ 28.—GLOUCESTERSHIRE. — "Theory of Isochromatic Photography," Mr. G. Embrey.
„ 28.—SOUTH MANCHESTER.—"Norway and its Fjords," Mr. J. W. Kenworthy.
„ 28.—CAMERA CLUB. — "Lenses," continued of lectures on "Elementary Photography," Mr. Lyonel Clark.
„ 29.—HACKNEY.—Open Night.
„ 29.—BLACKHEATH.—"Enlarging," Mr. A. R. Dresser.
„ 30.—WAKEFIELD.—Development.
„ 30.—DERBY.—"Hand-Cameras and Shutters," Captain Abney.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5870. **Lantern Slides by Reduction.**—Wanted, the distance between half-plate negative and lens, and lens and lantern plate. Focus of lens, 8½ inches. —FEN DOCTOR.

5871. **Multum in Parvo Camera.**—Will someone who has used this up to 15 by 12 state with what results?—FEN DOCTOR.

5872. **Diameter and Focal Length of Lens.**—Will anyone please tell me what diameter and focal length of lens must be for a camera which takes a 12 by 10 plate and has an extension of 30 inches? I should also be glad to know the rule which governs the diameter and focal length of lens for plates of any size.—H. B. S.

5873. **Composition for Graph.**—Can anyone tell me how to make the composition which is used in the various copying graphs?—QUERIST.

5874. **Printing-in Clouds.**—How can I print-in clouds when enlarging with Lancaster's enlarging apparatus?—QUERIST.

5875. **Acid Alum Fixing Bath.**—What harm can come of using the acid *alum* fixing bath given in AMATEUR PHOTOGRAPHER for negatives and bromide paper? It has the great advantage of hardening the film and so preventing it from injury in after processes, but I fear it might affect bromide paper so as to cause fading. Would it? I can never make it without getting sulphur deposited. Could it be modified to prevent this?—QUERIST.

5876. **Convex Glasses for Crystoleum Painting.**—Will someone kindly give me one or two addresses of good wholesale firms where these can be procured? —R. T. W.

5877. **Photo Prints Suitable for Crystoleum Painting.**—Where can these be bought? Are there any houses in London where good German photo prints can be got?—R. T. W.

5878. **Plate Numbers.**—Would any of your readers kindly inform me whether the sensitometer number placed by manufacturers on their plate boxes is only approximate, or can be relied on in estimating exposuree? For instance, according to Bothamley's book, Ilford ordinary marked 18 require exactly twice the exposure of special rapid marked 24, while according to the Cadett tables in Abney's instruction, the exposure should be four times.—R. C. LONG.

5879. **Enlarging Lantern.**—Have just commenced lantern-slide making, and am anxious for information as to whether a good enlarging lantern, such as the Optimus, is equally useful as the ordinary lantern for exhibiting slides, both in large and small rooms (of course, the bulk considered apart), as, if there were no serious drawback, I should prefer the enlarging apparatus, so as to be able to enlarge from my quarter and half plate negatives.—R. C. L.

5880. **Speed of Shutter.**—Should be glad of information as to the speed of my Kodak shutter, No. 3 Kodak Junior, just the ordinary as bought from the makers, and then the other three catches by which one cannot increase the tension. I have also a half-plate lens, called the iris shutter, of foreign and unnamed make, of which I should like to know the speed.—R. C. L.

5881. **Dark-Slides.** — Does anyone know if the double dark-slides used with Lancaster's "Merveilleux" camera are capable of being used without any alteration with Le Meritoire camera?— IN STATU PUPILLARI.

5882. **Shutter.**—Will some kind reader kindly tell me of a good shutter for a hand-camera I am making, say about 10s. or 12s., for time and instantaneous not the pneumatic ball arrangement ?—X.

5883. **Enlarging.**—(1) Will anyone tell me where I can procure tables for enlarging with Lancaster's Multum-in-Parvo and my own camera? (2) Can I use this with artificial light, and if so, which is the best to use, gas or paraffin, and is there any way of using them without a lantern? I do not possess one, and they seem very expensive.—MANFIELD.

5884. **Film Slide.**—Can any reader inform me of a suitable dark-slide for a Major Bruno hand-camera for cut films only?—B.

5885. **Flash-Light, etc.**—Can anyone tell me of a small book giving instructions how to photograph by flash-light and magnesium lamps?—IN STATU PUPILLARI.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED

Oct. 28th.—No. 5849.
Nov. 4th.—Nos. 5850, 5851, 5852, 5854, 5856, 5857.
,, 11th.—Nos 5859, 5860, 5862, 5863, 5865.
,, 18th.—Nos. 5866, 5867, 5868, 5869.

ANSWERS.

5861. **Loan of Negatives.**—The writer will be pleased to loan "Trefoil" say half a dozen whole-plate negatives of Irish scenery, if the gentleman or lady will forward stamps to cover parcel post.—JNO MCMURDO, Bessielea Cottage, Bellehill.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING's *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

R. T. W.—Many thanks, but it has almost gone entirely out of fashion.

L. F. R.—Your queries are inadmissible. Wood's washer is a good one, and you will find Edward's, England's, Fitch's, or Obernetter films easily managed, just as glass plates, and all are to be had in 7½ by 5 size.

M. HAFEN.—We do not see that you want a better lens than your 3½ in., but if so we should choose No. 6 of 4 in. focus. Thanks for note, reprinting out.

F. H. JOSCELYNE.—As soon as your print which is with the others on loan, comes back, we will try and find and criticise. Try with the rocking-horse, but do not print so deep. It often occurs that clouds opposite the sun are obtained, especially in the afternoon.

MORA.—T. Haddon, 2, Maitland Street, Edinburgh, sells Vitreographine, a special ink for diagram slides. Baird also sells ground glass which can be written on and then varnished for same purpose. We will try and get article written.

B. PUCKLE.—Your slide was accidentally put in the competition. We should say that the negative was one with harsh contrasts, the slides over-exposed, and as a picture very poor.

ASHTON.—We will communicate with makers, and write you.

G. S. W.—We do not know the lenses named, and the statement that the other lenses you name are as good as you could buy anywhere is not one that receives our support, because it is impossible to speak generally in that fashion of any lens-makers, particularly those in question.

J. THOMAS.—Yes, we shall always be pleased to develop some plates for you if you send full particulars as to make, subject, time of day, light, and exposure. Mark on the outside of packet "Unexposed plates."

FEN DOCTOR.—Yes, we shall be pleased to lend you 150 to 200 slides, free of charge, provided you pay carriage both ways.

T. A. SUMMERS SCOTT.—Print will be retained for next Figure Study.

TEPIDUS.—Many thanks for letter and sample.

J. ROBSON.—Many thanks for the trouble you took in binding slides.

T. BLIXRUDI (Christiana). — Barnard's varnish colours most decidedly.

M. AUGUSTUS.—We fail to see how you can use your flash lamps without getting false and cross lights—because you must burn your wire or flash your flash behind the camera, and opposite therefore to the lighting from the E. window. Our method would be to use one of Edwards's medium isochromatic films, backed and exposed on a dull day when the light was behind the camera, that is in the afternoon. The ghost is a troublesome thing to overcome, but could be got over by trying different lenses, no doubt.

D. W. F. M.—(1) Printed too black; surely the streaks are admissible, does it not suggest a ghost in a very suitable place. (2) Good. (3) Better. (4) Printed too deep. (5) Ditto. (6) Ditto. Shade the top of this while printing. (7) Printed too deep. (8) Over-toned, you have a good model; try a scene from "Faust" or the "Fair Penitent." The accessories in your print are poor, and out of keeping with so graceful a pose, and why should the model look at that curious bit of wood on the wall? The tone is good, but nearly all are printed too deep. Do not burnish. Pack a negative safely and send us, and we will print one for you to show to what depth to print. Can you call and see us by appointment?

HYDROKINONE.—The fault is not in the lens, but is due to over-exposure for the distance, at least this is what we understand from your letter, or do you mean that you cannot get clear lantern slides from negatives of distant views?

H. HOLT.—Nobody has won a clasp yet. Try again; go in for rough-surface printings, and try for the lantern slidee.

J. W. WESTERN.—(1) Too much pyro and bromide in developer. You will find in our issuee of Sept. 9th and 30th, a paper on harmonising harsh negatives which process should be applied to this. (2) Ditto. (3) Would stand reducing slightly, and then intensifying. Have you not been using hydrokinone, if so, this accounts for the harsh contraste at once. (4) Intensify. (5) See note to 1. (6) Ditto. (7) Intensify with mercury and ammonia. (8) Intensify with Monckhoven's silver cyanide. (9) Intensify mercury and ammonia. (10) Intensify mercury and sulphite. (11) Treat as suggested for No. 1. (12) Good. Negatives ready for you on Saturday morning.

LIMELIGHT.—Yes, we should recommend the Scott saturator, and as a rule the slides never stop in the lantern long enough to get damaged. We should have a 40 ft. bottle. You would not really require more than 2½ ft., but it is just as well to be on the safe side.

CALDER.—Shall be pleased to criticise prints, and return same to you.

ALPHA.—(1) The fault is in the paper, not in your manipulations. (2) To make the gold solution neutral, add about ten grains of bicarbonate of soda to every grain of gold immediately before mixing your bath. Add the same to the sulphocyanide bath. (3) Your query is inadmissible, but we believe the apparatus to be well made and capable of turning out good work.

A. M.—We do not know anything about the paper, but have written for some.

H. H.—The "Optimus" will do all the work and more besides. Get rid of the other lens.

R. H. M.—Many thanks for letter and enclosures duly to hand. We have not got the number you ask for, but will see if we can get it.

W. N. WHITTARD.—The usual way is for competitors to write on entry form, "Winner of bronze or silver medal."

J. C. M. (Germany).—Always glad to help you. (1) The peculiar positive appearance of the image when viewed at a certain angle is merely due to the total reflection of the light from the silver particles forming the image, and may be totally disregarded. (2) We should and do prefer to use 25 c.c. of C, and 35 c.c. of D, without any water this is quite weak enough, your developer is too weak to suit our taste. We have not found any difficulty in getting density in a reasonable time, in fact the general cry is that the fault is that the films are prone to give too much density. (3) Aqueous solution of shellac is considered the best varnish. Try adding strong ammonia to white hard varnish till it becomes clear. (4) There is no work on platinum printing, except "Die Platinotypie," by Hubl, and for the carbon process "Der Kohledruck," by Liesegang. The Autotype Company also issue the A B C to Carbon Printing, price 2s. 6d. The platinotype paper will keep in its calcium tube, but the carbon tissue will only keep fourteen days when sensitised. You could buy it and sensitize it yourself by floating on solution of bichromate of potash. (5) Pleased to see your prints. No, they need not be mounted. Never mind the number of questions, we will always answer as many and as often as you like to ask.

B. B. B.—Rapid plates are better, but the exposure will depend solely upon the light, etc., which we cannot gauge. The extra rapid plates are, we believe, three times as rapid as the ordinary. We will try and find your print, and criticise.

EMERALD No. 2.—(1) Dip your slide into ferrous sulphate solution 2. There is no chance of the image fading. (3) Prussian blue is formed with the ferridcyanide. We hope to publish paper on Mezzotype next week, but, alas! we have not green tones yet. These could be got by the carbon process.

L. D. A.—(1) Good, slightly over-printed, and wants trimming down. Some bipeds are not above following the example of your cat and dog. We notice both have rather a tendency to cast suspicious sheep's eyes. (2) Very fair, though you were a little too far off, and there is a suspicion of flare in the centre of this. (3) Very poor, over-printed, absolutely without any interest beyond the white blouse which immediately catches the eye. (4) As a likeness this is good, as we are not unacquainted with the sitter by sight. The accessories are not happy, but it is worth retouching if you think it wants it—we don't. (5) Good again, might be printed a little deeper. (6) Fair; it would be as well to spot out the white flowers by the sitter's face, so as to throw the latter more into relief. (7) You were a great deal too far off. Wants intensifying, we should say, and print is over-toned. (8) Ditto.

H.—Your print wants clouds, and is, we are afraid, hardly artistic enough to score. Nitric acid, with an equal quantity of water, is the best thing to clean dishes, and should be used with a brush.

ERA.—We place direct into the fixing-bath. We are not quite sure that the change of tone is tonin as it occurs even on drying. We are looking into th question, however. We hope to publish a paper nex week on it. The print you send is very good though we should have liked just a trifle deeper printing.

PUNJABI.—You might send us up some negatives if you like. (A) Flat and wanting in distance. (B Negative wants intensifying, over-toned. C. Over-toned. Can you not call on us?

HIDE.—(1) There is only one fault, and that is your horizon is at an angle of about 25 deg. In England it is usual for water to find its own level, and not rise up. (2) Very fair, slightly over-printed. (3) You might have skewed your camera round a little more, and not arranged your tree so as to grow out of the top of the fountain. (4) Over-exposed and spoilt by halation. (5) Flat and over-exposed. This looks far better when taken a little way up, with an afternoon light.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques or Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.,** *or a commission of* **2½ per cent.,** *upon the sale price of the apparatus.*

Cameras, Lenses, etc.—Will exchange Rayment's patent whole-plate camera and three double slides, good as new, for microscope by good maker, stereoscopic camera, or will sell; can submit to Editor's inspection; also Swift's whole-plate rapid Paragon lens with iris diaphragm.—No. 354, office of this paper, 1, Creed Lane, E.C.

10 by 8 double extension portable bellows camera, all movements, one double brass-bound book slide, take £4; R.R. lens for same, £2 10s., or £6 lot. Half-plate square leather bellows camera, all movements, three best double book slides, folding stand, very best make, take £4. Quarter hand-camera for use on stand, fitted with 5 by 4 enryscope lens and three double book slides, finder, and shutter, and stand complete, £2 5s.—G. A. Knight, Claremont Road, Seaford, Sussex.

Hand-Cameras, etc.—Optimus hand-camera, rectilinear lens, two finders, three double dark slides, 3 guineas, cost 6; open to exchange.—Clemence, 80, Bath Road, Bedford Park, Chiswick.

Stirn's waistcoat detective camera, in good condition, 12s. 6d. — Mitchell, 99, Commercial Road, Ipswich.

Griffiths' camera, detective, excellent single lens, three slides, pneumatic instantaneous shutter, perfect order, cost 27s., sell for 16s.—Owen, Croesor, near Penrhyndendraeth.

Lanterns, etc.—Splendid single limelight lantern, £13, complete for £8; pair best mixed gas jets, 34s.—Waldron, Chemist, Hanley.

Lantern Slides.—Lantern slides of views, seascapes, portraits, etc., 6d. each.—Tickery, 5, Vrinces Buildings, Bath.

Lenses, etc.—Lancaster's Instantograph lens

quarter-plate, and shutter for sale, £1.—Culmer, 75, Lichfield Road, Bow, E.

Lancaster's half Instantograph lens and shutter, 14s.—Kean, 14, Queen Street, Darlington.

Cabinet portrait lens by Ross, rack and pinion adjustment (no stops or flange), 40s.—H. M., 111, Shakespeare Road, Herne Hill, S.E.

Negative.—First-class negatives, specially selected as guides for amateurs, showing retouching, etc., result of 40 years' professional experience, 6 for 1s. 3d., free.—Richford, Wells, Norfolk.

Sets. — Extraordinary bargain. Watson's latest pattern whole-plate Acme camera, turntable top, with Watson's three-fold tripod, fitted with Ross's rapid symmetrical lens with iris diaphragm, the lot cost over £23 new, sacrifice for £5.—Address, G. Brunker, 12, Stanley Street, Southsea.

For sale, quarter-plate Lancaster's Instantograph, good lens, three double dark slides, instantaneous shutter, folding legs, 30s.—Tuckfield, Halstead, Essex.

Half-plate Optimus camera, 7 by 5 R.R. lens, tripod, and one slide, £5 5s.—Arthur, 10, Dunsford Villas, Merton Road, Wandsworth.

Lancaster's quarter-plate Instantograph, including camera, lens, iris stops, two double slides, tripod in leather case, bag for camera, perfect, 40s.; also quarter-plate set by Watson, camera, lens, one double slide, strong tripod, complete with box for camera, in good condition except slide, price 20s.—S. Williams, Secretary L.E.C.C.C., 38, Silver Street, Leicester.

Marion's Student's 5 by 4 camera, lens, stand, two double slides, two printing frames, set of dishes, including special made leather case, all for 40s.—Sergt.-Major Jones, Army Service Corps, Devonport.

Stereoscopic Apparatus.—Stereo hand-camera, very compact, splendid lenses by Underwood, iris stops, four double backs, price 40s.—T. H. Bisbop, Lake Street, Leighton, Beds.

Sundries.—Mitre cutting machine, scarcely used, 10s. 6d.—St. Lucy's Cottage, Kingsholm, Gloucester.

For sale, first 13 vols. of AMATEUR PHOTOGRAPHER, ten bound, also first ten boliday numbers, the lot £3.—C. P., 24, Hazlitt Road, West Kensington.

Solid leather tripod case, waterproof canvas case for quarter kit, new, half price.—Edwards, 8, Mapesbury Road, N.W.

Eastman's half-plate rollbolder, 21s.; Tyler-Pickard exposure meter, 4s.; tripod, three-fold, 6 in., 13s. 6d.; ditto, two-fold, 8s.—Waldron, Chemist, Hanley.

Dark-room lamp by Bishop, as new, also 11 in. burnisher by Adams, exchange for ebort-focus lens, or sell 25s.—White, Poplars, Sutton-on-Trent, Newark.

WANTED.

Hand-Cameras, etc.—Wanted, Talmer or Underwood's Sphynx quarter-plate hand-camera; exchange microscope by Swift, coet 70s., and little cash.—Turnell, King Street, Stroud, Glos'.

Lantern Slides.—Wanted, slides of Yorkshire, North Wales, Derbyshire, Isle of Man; will give slides in exchange.—Allen, 2, Pyrmont, Barber Road, Sheffield.

Loan of Negatives.—Wanted, loan of negatives suitable for making lantern slides by contact, interesting subjects. Description and terms, Thomson, Lang Street, Tetbury.

Prints.—Wanted, a few prints to illustrate the geology of the chalk district, cliffs, ravines, quarries, etc.—Newburn, Beach-terrace, Widnes.

Sets.—Wanted, half-plate outfit in exchange for good violinist's outfit.—Goddard, 9, Trafalgar Street, Ashton-under-Lyne.

Wanted, half-plate outfit, good maker, will exchange 1-3rd h.-p. steam engine, no boiler, small dynamo and frictional electric machine, 4 cele, Bunsen, and some sundries.—E. H., 44, Wandle Road, Upper Tooting.

Sundries —Wanted, AMATEUR PHOTOGRAPHER, vol. 7.—W. Tbacker and Co., 87, Newgate Street, E.C.

Lanterns! Lanterns!! Lanterns!!! Slides! Slides!! Slides!!! The largest and most varied eelection in tbe whole kingdom. Before selecting elsewhere, call and inspect the etock of the City Sale and Exchange, 54, Lime Street, Leadenhall Street, City, where we have no hesitation in eaying you will find all that you require in tbis way. Lanterns for sale, lanterne lent on hire, lanterns sold on commission, or taken in exchange for other apparatus. Write for epecial supplemental liets, Manager, City Sale and Exchange, as above.

Special Notice.—Stanley Show Stand No. 3 (Photographic Section), Agricultural Hall, from Nov. 18th to 26th. To weekly readers of the four following advertisements, and to all whom it may concern. We intend to have tbe *brightest*, *biggest*, and *best* show in the exhibition. If you wish to see all the bset tbings in the market, and everytbing up to date, don't fail to visit our etalls, wbich cover over 100 feet. City Sale and Exchange, 54, Lime Street, Lsadenhall Street, City (late Goy's Medium).

Bargains in Lenses.—Dallmeyer No. 2 B portrait lens, Waterbouse stops, rack focusing, grand definition, ae new, £7 7s.; whole-plate rapid rectilinear lenses, by Parker, Holborn, covers well to edges, Waterhouse stops, moveable hood, as new, 45s.; 9 by 7 Optimus rapid euryscope lens, grand definition, Waterbouse stops, as new, £5 5s.; whole-plate rapid rectilinear by Charterhouse Stores, Waterhouse stope, best condition, 35s.; 7 by 5 Laverne wide-angle rectilinear, grand definition, rotating stops, as new, 22s. 6d; half-plate landscape and view lens, by Hinton, etand, Waterhouse stops, as new, 15s.; half-plate Lancaster Instantograph lenses, iris etops, and instantaneous shutter, 15s.; half-plate Ross rapid eymmetrical lens, as new, fine definition, Waterhouse stops, £3 17s. 6d.; Optimus quarter-plate portrait lens, rack focussing, Waterhouse stops, quite new, 21e.; 5 by 4 Optimus rapid rectilinear, by Perken, Son, and Rayment, Waterhouse stops, 27s. 6d.; Swift 5 by 4 wide-angle rectilinear, 5 in. focns, rotating etops, 32s. 6d.; Dallmeyer portrait lens, c.d.v., grand definition, Waterhouse etops, finest order, 63s.; Quarter-plate hand-camera lens, by Laverne, rapid rectilinear, adjustable focus, 15s., quite new. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenball Street, City (late Goy's Medium). Every description of apparatus honght, sold, or taken in exchange.

Don't fail to visit Stand No. 3, Arcade Gallery, Agricultural Hall, November 18tb to 26th, Stanley Sbow (Photographic Section).

Bargains in Hand Cameras.—Marion's Radial hand-camera, carries twelve quarter-plates, fitted rapid rectilinear, instantaneous shutter, two sunk finders, covered morocco, in case, £5 5s.; 5 by 4 Swinden and Earp hand-camera, fitted Laverne rectilinear lenses, adjustable focus, carries twelve 5 by 4 plates, finder, roller sbutter, etc., as new, £5 12s. 6d.; Fallowfield's special Facile, covered morocco leatber, special rectilinear lens, iris stops, two finders, instantaneous shutter, carries twelve quarter-plates, ae new, take £5 10s., cost £8 9s. 6d.; Rouch hand-camera, quarter-plate rapid rectilinear lens, roller behind ebutter, bag changing, as new, £3 17s. 6d.; Fallowfield's Facile landscape lens, sbutter, finder, etc., carries twelve quarter-plates, 50s.; Luzo hand-camera, by Robinson, rapid rectilinear lens, time and metantaneous sbutters, carries 100 films, size quarter-plate, leather case, as new, £4 12s.; Cbadwick's hand-camera (practical), rectilinear lens, rotating stops, roller blind, shutter, rack focussing, twelve Barnett's patent slides in leather case, as new, £4 4s.; Shew's 5 by 4 Univereal hand-camera (folding), leather bellows, adjustable focus, fitted Swift's rapid paragon lens, Waterbouse stops, Thornton-Pickard shutter, tbree double elides, covered morocco, as new, £6 7s. 6d.; Blair's 5 by 4 band-camera, good lens, time and inetantaneons ehutter, two finders, rack focussing, three double dark-slides. as new, £3 3s.; Kodak No. 1, best R.R. lens, carriee 100 filme, beet order, in leatber case, 40s.; McKellen'e hand-camera, R.R. lens, shutter, carries 12 quarter-plates, covered leather, as new, 35s.; Fallowfield'e Facile, fitted rapid rectilinear lens, carriee twelve quarter-plates, as new, £3 17s. 6d. All ahove are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second hand apparatus bought, eold, or taken in exchange. Inspection invited.

Don't forget to visit the City Sale and Exchange Stand, No. 3, Agricultnral Hall, November 18th to 26th (Stanley Sbow).

Bargains in Cameras and Sets.—Whole-plate camera, by Middlemiss, wide angle movement, double extension, leather bellows, all latest improvements, three double dark-slides, book form, rapid rectilinear lens, Waterhouse stops, Taylor and Hobson finder, three-fold stand with turn-table top, and solid leather case, grand lot, £8 15s.; whole-plate camera, by Walker, back and front extension, rising and falling front, double extension, leather bellows, three double elides, rapid rectilinear lens, Thornton-Pickard shutter, three-fold stand and case, finest condition, £8 8s.; half-plate camera, by Percy Lund, back extension, conical leather bellows, three double slides, rapid rectilinear lens, sbutter, folding stand, and case, as new, take £4 10s.; Lancaster's half-plate Instantograph camera, moveable case, leather bellows, two double elides, fine view and portrait lens, iris stops, folding stand and case, 52s. 6d., loweet; Optimus half-plate Rayment camera, reversing back, and all best movements, fitted rapid rectilinear lens, iris stops, three double slides, and three-fold stand, grand set, ae new, £7 5s.; half-plate camera, by Houghton, all latest movements, grand article, fitted three double elides, rapid rectilinear lens and double folding etand, £6 10s.; quarter-plate Lancaster's Merveilleux eet complete, 15s.; Lancaster's quarter-plate Instantograph, finest order, all latest improvements, including camera, lene, iris etops, two double slides, etand and case, 37s. 6d.; 5 by 4 best quality camera, by Robinson, Regent Street, leather bellows, rising, falling, and cross front, wide-angle movement, three double slides, fine rapid rectilinear lens, by Robinson; Newman's sbutter and Eastman's ½-plate roll holder, quite new, £5 17s. 6d. All above guaranteed finest order. On view, City Sale and Exchange Roome, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Don't fail to visit Stand No. 3, City Sale and Exchange, wbo will bave the brightest, biggest, and best show at the Agricultural Hall, November 18th to 26th.

Magic Lanterns and Slides. — Walter Tyler's Helioscopic is perfection of all lanterns, supplied to Indian Government, School Boards, science classee, clergy, and exhibitors throughout the world. Impossible to have lanterns give better definition or more satisfactory results; specially constructed lene, which no other lantern possesses.—Walter Tyler, 48, Waterloo Road, London.

Walter Tyler's Best Triples and Biunials are unsurpassed, and perfect in every detail. Good biunials, mahogany bodied, brass fronts, and all improvements, £7 10s.; eingle lantern, with 4 in. condensers, portrait front lens, 4-wick lamp, complete, in case, 27s. 6d.—Walter Tyler, 48, Waterloo Road, London.

Lantern Lenses.—Specially conetructed. Walter Tyler's new Helioscopic portrait combination lantern lens gives the most perfect definition and brilliancy, can be fitted to any lantern, and for excellence cannot be eurpassed. No other maker has this lens, which is manufactured expressly for Walter Tyler, 48, Waterloo Road, London.

Regulators and Gauges.—Great reduction, in price. Either can now be had of Walter Tyler for 14s. eacb. The largest stock of gas cylindere in England. Best seamless steel, tested and valved, and all sizes at very low prices.

Slides from Negatives and Pictures.—Walter Tyler manufactures and colours slidee on the premises, thus ensuring speedy delivery, and pricee are most moderate.—Walter Tyler, 48, Waterloo Road, London.

Biunial Lanterns.—If you are in want of a really good biunial lantern, perfect in every respect, call and see Walter Tyler's entire brass fronted, mahogany-bodied, lined with Russian iron, and fitted with new best quality lenses, and sold at a moet moderate price. The top lantern will take a 4-wick lamp. These are great bargains.—Walter Tyler, 48, Waterloo Road, London.

Hire Department is now perfect. Largest and best collection of slides in the world; over 200,000 always in stock. Temperance, travels, Scripture, educational, comic, tales, etc. Cheaper than any otber house, no extra charge for coloured slides or effects. Special terms for large quantities.—Walter Tyler, 48, Waterloo Road, London

Lanterns and Slides.—If you wisb to bire, purchase, or exchange, you cannot possibly do better than go to Walter Tyler, wbo makes thie business a specialite, and you will tbus eave dealer'e and all intermediate profits.—Walter Tyler, 48, Waterloo Road, London.

Second-hand Lanterns and Slides at very moderate prices, aleo all kinds of apparatus. Send for large catalogue, 420 pagee, with instructions for working lanterns of all kinds, and costing an immense sum to produce, sent free for 6 etamps. Small catalogue and seco nd-hand list, post free.—Walter Tyler, 48, WaterlooRoad, London.

Bijou Enlarging Lanterns.—Finest results with Hughes's patent rectangular condensere, half the size of ordinary make, superior definition, proper diffusion of light; scientifically conetructed, not commercial; eeveral whole and half-plate for sale, cheap.

The Marvellous Pamphengos. — Finest oil-lighted lantern, equale limelight, etood the test of over fourteen yeare against all imitations, elegant solid brass fronts, best lenses, from £2 10e. each.

Magic Lanterns, Magic Lanterns.—Largest assortment in the world, cheapest and best, nicely japanned lantern body, 4 in. double condensers, portrait front lenses, rack and pinion, four-wick lamp, in case, £1 7s. 6d.

The Docwra Triple Prize Medal, highest award, supplied to Dr. H. Grattan Guinness, Capt. C. Selwyn, Madame Adelina Patti, and tbe Royal Polytecbnic, etc..

The Malden Triple; supplied to B. J. Malden, Esq.; unparalleled reults; Capt. Chas. Reade, R.N

Fine Triple Lantern; four set of large diameter lenses, £32, cost £60.

Special Triple; mahogany, brass fronts, £12 12s.

Elegant Mahogany Biunial; brass fronts, £7 10s.; blow-through eafety jets, 11s.; mix gas jet, 15s. 6d.; Malden double dissolving tap, 15s. 6d.; a number of grand effects; particulars free, before purchasing. Send for Mr. Hughes's grandly illustrated catalogue, over 180 fine wood engravings, price 6d.; postage 3d.; separate list of 60,000 slides, price 6d.; postage 3d.; pampblets free; eecond-hand lists of bargains.—W. C. HUGHES, Brewster Houee, Mortimer Road, Kingsland, London, N. 50 coloured slides on loan for 3s.

CHRISTMAS CARD MOUNTS, gold blocked mottos, fancy bevelled edges, various samples; 1s. and 2s., post free.—Hooper and Co., mount manufacturers, 5, Hand Court, Holborn, London. Price list of all kinds of mounts poet free.

ENLARGING APPARATUS. — Hume's enlarging apparatus, 5 in. condenser, without objective, 61e.6d.; with 8 in. condenser, 122s. 6d., carriage paid.—Hume, 1, West College Street, Edinburgh.

IMPORTANT TO AMATEURS.—Negatives skilfully Retouched. Printed in silver, gelatino-chloride, etc., and Enlarged. Also Developing, Copying, etc.—Terms strictly moderate.—Address, Wilfred Emery, 24, South Street, Baker Street, W.

The Amateur Photographer

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 426. Vol. XVI.] FRIDAY, DECEMBER 2, 1892. [Price Twopence.

Our Views.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc, from 10 till 1 o'clock.

Our Views.—Mrs. Clarke's Pictures at Leytonstone—The Medal Question—An Important Question—Is a Lantern Slide a Picture?—The Judges at Tunbridge Wells—Too High a Standard—Local Views—Medals Again—A New Club—English Artists and Japan—Chicago—Louth Exhibition—Flats and Flat Country—What is Art?—Scientific Experts—Societies' Reports—The Peripatetic Photographer.

Letters to the Editor.—Woolwich Societies (Unity)—What to do with Spoilt Negatives (Cooke)—The Tunbridge Wells Show Up (Disgusted)—A Suggestion (Quinol)—Lantern Slides (Craig)—Enamelling Prints (Kennedy).

Articles.—General and Photographic Chemistry (Conrad)—Mezzotype and Other Rough-surfaced Silver Papers—Rational Development (Simkins)—Skies in Photographs (Hodges).

Reviews.—Virages et Fixages—La Photographie la Nuit—Les Tableaux de Projection—Manuel de Chimie—Around the Roman Campagna.

Apparatus.—Dollond's Monocle—Hannam's Christmas Mounts—Marion's Art Studies.

Exhibitions.—Tunbridge Wells—Exeter—S. London.

Societies' Notes.

Socities' Meetings.—Aldenham Institute—Bournemouth—Cardiff—East London—Glasgow—Fairfield Camera Club—Fillebrook—Hackney—Leigh—Liverpool—Louth—North Surrey—P.S.G.B—Pudsey—Putney—Sutton—West Kent—West London.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months,	5s. 6d.	Twelve Months,		10s. 10d.
Postal Union	,,	,, 6s. 6d.	,,	,,	13s. 0d.
Out of Postal Union ..	,,	,, 7s. 9d.	,,	,,	15s. 8d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 43.—"Portraiture and Figure Study." Latest day, December 19th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, January 13th, 1893.)

An explanation is due to Mrs. S. Francis Clarke, with regard to the disqualification of her picture at Leytonstone. This occurred from the fact that the print there exhibited was somewhat similar to one which had been previously awarded a prize. Mrs. Clarke is so well known as a successful worker in figure studies, and is, as we are aware from personal knowledge, a most enthusiastic worker, that we regret having for one moment led anyone to believe that she was guilty of wilful or accidental negligence of one of the conditions of exhibition.

Undoubtedly the time is ripe for a clear understanding as to the awarding of medals and previously medalled pictures. The subject is one which will be very prominently brought before the photographic world in a short time. Cannot the Camera Club or the P.S.G.B. do good service by forming a committee to consider the question?

An important question was put to us last week which we were and still are unable to answer. We will state the case as plainly as we can, and ask our readers for their opinion. A negative is obtained and prints from the same medalled at one or more exhibitions. Is it permissible to make lantern-slides from the same negative for competition or exhibition purposes, and would the same be eligible for entry in an exhibition, one of the conditions of which debarred previously medalled pictures?

The point seems to us to be this. If a print receives a medal as a picture, then a lantern-slide from the same negative is debarred if a lantern-slide is a picture. Is a lantern-slide but another method of photographic printing? If so, why should it again be medalled?

The action of the judges at Tunbridge Wells is one that has and will cause no small amount of comment, and whilst they have no doubt acted in all honesty of purpose, it is said that it will have a disastrous effect on the society, and that the question of disbanding the same has been discussed and is still under consideration.

We never, beyond expressing a slight surprise at a judge's award, feel it incumbent on us to question the same; but we certainly do think that in this case Messrs. Gale, Davison, and Mayland have overstepped the bounds, and it was not only hard but unfair to local talent to set so high a standard.

WE publish a letter upon the subject, and, judging from extracts also sent us from the local paper, the feeling is strong in the town itself. It is true that this action enhances the value of the awards made, but was it wise?

THE question of medals, exhibitions, and previously medalled pictures is a burning one, and even the stones cry out for settlement and some authoritative action.

WE referred a week or so back to a nebulous idea of a central photographic club, and we are glad to hear that the scheme is well on its way. The goodly ship, laden with the hopes of the leading men of photography, both in art and science, we trust will meet with fair yet vigorous winds from all, and come safely to port.

ENGLISH artists have studied and painted in Japan, and collections of modern Japanese art have been seen in London, yet probably our British public hardly realise the degree of cultivation at which the artistic mind in the far East has arrived. By those who are in the best position to judge it is admitted that the standard of taste is there higher and more refined than in Europe, and hence it is with no little curiosity that the promised exhibition of photographic pictures in Tokio next year will be awaited.

WE understand that through Prof. N. K. Burton Japan invites a limited number of European photographers to send representative works to be judged by a jury composed exclusively of leading Japanese artists, who, it is pointed out, will know nothing of the names or previous records of the exhibitors and whose opinion will, therefore, be unbiassed.

Chicago on the one hand, Tokio on the other! Artist photographers are determined to be heard. True merit is the first thing, but persistent appeal is also a contributory towards recognition, and if the enemies of the art—how dwindling their numbers—deny the one they must at least admit the latter.

THE township of Louth—the very name suggests a low-lying marshy locality—is situated, as everyone knows, amidst the flattest of flat country. The names of one or two very well known photographers (and one a lady, whose successful work admits no equal amongst her own sex, and not too many amongst the opposite) are associated with Louth, and once a year the good folks organise a free exhibition of photography for the benefit of their uninitiated townsfolk.

IN sorrow be it said, the members of the photographic society in Louth are heard to rail against the level country which environs their town, and complain that there are "nothing but flats in and about Louth." Strange that some of our prominent landscape workers, whose works are well known enough in London and elsewhere, seem particularly addicted to picture-making in the lowlands, and hence some of these gentlemen have been asked to lend a few examples of marsh and fenland pictures in order to stimulate our Lincolnshire friends, and suggest the possibilities of an unpromising country. We are promised also a short article on "Photography in a Flat Country," which may also serve as instructive in the same direction.

"WHAT is Art? Science at least is definite," dropped from the lips of a well-known figure in photographic London and provincial circles. The prudent man nowadays is cautious of his answers, lest the scientific expert analyse and dissect them until their authors would not recognise them. So we answered nothing, and stepped not into the breach, where even angels might fear to tread. Truly science is definite, and perhaps the very difficulty of defining art is in some measure an essential characteristic of that which is born of imagination, and aims at the intangible ideal. But the man of measures and equations will find more delight in Euclid's diagrams than the precious suggestions of the artist's sketch. For him is the definite and real, he should beware how he sully by his touch the robe of the ideal.

SPEAKING of "Scientific Experts"—one of the many recent creations of the restless photographic mind—"Cosmos," in a leading contemporary, rushes into the breach as the champion of this peculiar species of photographer. Because Colonel Gale's own work exemplifies high technical excellence, he attempts to identify *him* as a scientific expert, and Captain Abney is an expert of a kind which most artists could tolerate. Has he not, and that recently, expressed high commendation of the very unphotographic photograph of an advanced Impressionistic worker? But for the matter of that a good many of these same experts appear to be yielding to the opposition, in proof of which statement we invite notice of recent medallings. How comes it that Seyton Scott's broadly treated fuzzy picture comes out "first" at Hackney if, as "Cosmos" would have us believe, both Mr. Ralph Robinson's colloagues were scientifically inclined, and how comes it that a print of this kind once styled a gravel-path photograph is medalled by a jury which includes Mr. Andrew Pringle, an award, by the way, the justice of which we cannot quite approve? Good, "Cosmos," leave these things to others who without subtle argument and nice deductions can reconcile them with their reasons and good consciences. Your "Jottings" will be more welcome without such criticisms as we refer to, and your friends the more numerous.

IT has often been suggested to us that in the interests of the general reader, and because the reports of Societies' Meetings appeal to a limited number only, we should cut down and abridge as far as possible these reports of proceedings in our columns. This we are striving to do, as will have, no doubt, been noticed. Now we are met with another difficulty, and that is the reporting of the very numerous exhibitions, which at all times, but particularly just now, are as plentiful as the troubles of a beginner in photography. We propose curtailing as far as possible the notices of these numerous exhibitions, believing that our readers will rather find our over-taxed space occupied with more permanent matter, and less of the typical newspaper reviews. We shall be glad to hear what some of our readers think of this.

THE peripatetic photographer is a well-known figure wherever cheap-trippers and holiday-makers foregather, yet it is rarely he figures in literature as a character study of our times. The *Morning Leader* of November 18th, however, selects this character for its eleventh type of "London Life." The writer finds his subject on the banks of the River Lea, appealing to passers by with:—

"An' the price only sixpence. Here I am, ole Joe, what has 'anded 'alf London down to posterity. Young man, it'll be rough on that Roman nose of yourn if future generations don't admire it. Don't cheat yer nose, I say. Let it 'ave fair play. Come on! Come on! What? Ain't that bonnet of yourn, miss, worth sixpence to be 'anded down? Ah! that's the style. You'll be himmortal in a jiffey, miss. Now for posterity!

"With that final tribute to the recording powers of his art he disappeared beneath his dark cloth."

What a suggestion for the artist who has immortalised "coster life," Mr. Albert Chevalier!

There is trouble in the air, and rumours even of litigation, anent the subject of sending prize pictures to unmedalled classes. Our contemporary, who rarely errs on the side of over-discretion and gentleness when he commences an attack, has safely styled it "Bluffing the Judges." There will be more, and a good deal more, to be said here and elsewhere on this subject, but of this anon.

Two suburban societies, the notices of whose exhibitions recently occupied attention, both aspire to the luxury and dignity of being their own landlords and having their own premises. These are strides indeed for young societies. Meanwhile the parent society languishes in a garret—we beg pardon—in an upper storey where but few venture to intrude.

Thus far the weather, though uninviting indeed to the outdoor photographer, has been anything but wintry; still, snow is probably not very far off, and in these times of rapid changes of temperature it is unwise indeed to wait until the snow is covering the ground before one looks up what has been written and said on the subject of exposure and development of snow pictures. Read up beforehand and so be prepared, for the white fields of one day may become converted into brown mud within twenty-four hours, and snow time is a limited period at best, and one has little time for practice and experiment.

We hope to give some lengthy notes on snow pictures, chiefly from the artistic aspect, in an early issue.

Letters to the Editor.

WOOLWICH SOCIETIES.

Sir,—Woolwich is evidently flourishing in the photographic society line, as witness the new society formed six months after the birth of the Polytechnic Photographic Society. Man, surely, hath great faith in himself to even contemplate the formation of *two* societies in Woolwich, after the miserable existence and ignominious death of *one*, which ran its short career some eighteen months ago. Are the Poly members such juvenile workers that no benefit can result from swelling their numbers? Or does any one wish to handle the reins?

Man, also, is ambitious as well as confident. I may say the "Poly Society" is in a very prosperous condition, and with Mr. A. R. Dresser as President, ought to commend itself. I, therefore, ask, "Is another society needed?"—I am, yours, etc.,

Unity.

* * * *

WHAT TO DO WITH YOUR SPOILT NEGATIVES.

Sir,—Can you find space for a few words on the above subject in your paper, as I think they may be of use to some amateur photographers? Most amateurs, I think, have a few failures among their negatives, though some say they don't, but I have never seen inside their dark-rooms. I have many such, and what use to turn them to puzzled me for some time. I clean them well with hot water, so as to remove all chemical impurities, and then in the ordinary way with a solution of gelatine, squeegee a silver print (smaller than the glass, say a quarter print for a half negative) in the centre and leave to dry. Then squeegee some tinfoil round the bare parts of the glass, so as to make a sort of frame for the print. Then take a piece of cardboard the size of the glass (that which Eastman's bromide paper is packed in answers capitally), and bind it to the back of the glass with strips of gummed paper, in the same way as lantern slides are bound. This, with a support of some kind, makes a pretty little ornament, and is in my mind very effective for a snow scene or the like.

Hoping this may be of use to some brother amateurs, I am, yours, etc.,

J. R. Cooke.

* * * *

THE TUNBRIDGE WELLS "SHOW UP."

Sir,—"Obtaining pictures under false pretences"! Rather strong remark to make, but such and kindred expressions have been heard reiterated since the awards of the Tunbridge Wells Photographic Exhibition have been made known. The Tunbridge Wells Photographic Association published particulars of their sixth annual exhibition, and offered in all forty-one silver and bronze medals for competition, which had the effect of bringing together nearly 800 pictures, amongst whom were the best workers of the present day. But, to the astonishment of everyone, ten awards only were made, the remainder being withheld on the grounds of insufficient merit.

I do not for a minute believe the Association are in any way responsible for, or desired, such a mode of awarding. Are the Tunbridge people themselves satisfied with the result? I should say, not exactly. And the success of the exhibition has not been what they would wish for, judging from the remarks of an artist in the *Tunbridge Free Press*, who expresses himself in the following terms:—"The inhabitants of Tunbridge Wells are indebted to the amateur photographic society for a very excellent and interesting exhibition this week Another thing noticed in the town is the want of sympathy and the way in which local efforts are nipped in the bud. In this exhibition, the members of the Society seemed to have secured no prizes, and surely the judges do not think the exhibition is for the exclusive benefit of outsiders. Without questioning their judgment in the awards given, I maintain such work as Nos. 44, 45, and 46 are deserving of reward. These are most exquisite specimens of photography, full of tender and artistic treatment. Some work of H. Yeo could not possibly be better, so full of sweet harmony that it is a pity they are hand works instead of camera works; yet these lovely productions that have exercised the patience, skill, time, and energy of members have not received the slightest encouragement. As a non-exhibiting member, and one acquainted with art, I say it is a great mistake, and I fear will help to damp and check an institution that should be encouraged in every possible respect."

I did not pay a visit to the exhibition, therefore I do not question the meagre number of the awards made, but I certainly question the wisdom of placing the high standard that appears to have been set, for in looking through the catalogue we notice many pictures that have heretofore received recognition from hands equally as capable—aye, and even more so—of judging, as the judges in the present instance; and I cannot help thinking that the three photographers who have adjudicated have not all reached the high standard they themselves have set up. Admitting that one of them has attained that proficiency, is it wisdom to judge a local exhibition on that standard, and withhold the awards offered because the exhibitors have not reached the same degree of artistic merit. What do they want? In the class for interiors there are several men capable of managing this branch of the art with skill, and, in fact, I notice one or two entered in this class which we know to be well selected and technically perfect specimens, yet they do not reach the standard these "authorities" set up. Further, suppose we accept the plan adopted and agree that they are capable of judging at this very high standard, and that with regard to the pictures they adopted the proper course, the question will be immediately asked, are they also as capable of judging apparatus at the same standard? A silver medal was offered for the best show of apparatus, and I see that Taylor, Taylor, and Hobson exhibited a case of their lenses and standard fittings, for which they were awarded a gold medal at the P.S.G.B. Exhibition, yet even the magnificent work of this firm fails to reach the standard fixed by these critical judges.

Altogether I cannot but come to the conclusion that the result is one not likely to bring about the best result in the future for the Tunbridge Wells Photographic Society, for if the services of the same judges are retained for the next annual show, I feel sure the pictures will be considerably diminished in numbers.

—Yours, etc.,

Disgusted.

* * * *

A SUGGESTION.

Sir,—It was with great pleasure that I read Mr. Wilkinson's suggestion for an inter-society competition and exhibition in your last issue.

It is a scheme which would undoubtedly further the good fellowship already existing between photographic societies.

It appears, from the remarks as to limiting the size of plates, and these being marked, that Mr. Wilkinson's idea is to place the artisan or clerk with a limited amount of time and cash at

his disposal on the same level as the gentleman with an *unlimited* supply of both commodities. It is certainly a fair test for the capabilities of the competitor, as the man who could turn out the largest number of finished pictures from a given number of plates should by all means be classed as the best photographer.

This sounds all very well in theory, but I am afraid it would scarcely answer in practice. What is there to prevent a man exposing a plate or two of the same brand on a subject before he exposes the one marked?

With the idea as to marking the plates left out, I see no reason why the suggestion should not be carried to a successful issue, especially as it is proposed to place the profits of such an exhibition to the credit of the Photographers' Benevolent Association.

Wishing the movement every success, and thanking you in anticipation for inserting this, I remain, yours, etc., QUINOL.

* * * *

LANTERN SLIDES.

SIR,—Messrs. Elliott and Son's suggestion as to the reduction of the harsh contrast in a lantern slide between the bright picture and the surrounding darkness seems to me a most feasible and sensible idea. But I am not sure that the use of a semi-transparent *paper* mask would give a very pleasing effect, since, unless specially made, the texture of the paper would show up; and again, one would have to keep to the sizes supplied by the manufacturer, for few amateurs can cut a satisfactory dome or circular shape. Of course, it is quite different in the case of opaque masks, for then one can modify the size of the opening in numberless ways by lengthening or shortening the sides of a dome, etc.; but with a semi-transparent mask this would be impossible, as every joint would be shown up.

Would it not be a better plan to *paint* the border of the slide or cover-glass with varnish painting colours? One could then vary the tint of the border to suit the tone of the slide; a matter just as important in lantern pictures as in ordinary prints.—Yours, etc., W. PITCAIRN CRAIG.

* * * *

ENAMELLING PRINTS.

SIR,—I have just seen a letter in your admirable periodical, signed "Thermo," complaining of failure in the process of enamelling silver prints.

As "Thermo" invites suggestions from his brother amateurs, I beg respectfully to submit the following for his adoption.

I have confidence in so doing as I have found the process to be absolutely successful. I use pieces of ordinary plate glass, slightly larger both in length and breadth than my prints, which are half-plate. I prepare a hot saturated solution of sodium carbonate, and into this I place the piece of glass, which is allowed to remain immersed therein for, say, two minutes.

I then remove it, and rub it well with the fingers on the side which is to be utilised. Next it is held under a tap of clean water (rain water the best), and the rubbing is continued until all traces of the soda disappear, and it is then reared on edge to drain. It is important to have some mark on the glass which will indicate the side to be treated in the various processes.

When the glass is drained, should it be found inconvenient to allow it to dry naturally, it can be dried over a paraffin lamp or before a fire. When perfectly dry I rub the prepared side softly with an old silk handkerchief kept specially for this purpose, in order to remove any trace of the soda or other impurity which may remain on the surface of the glass. The glass is then sprinkled lightly with fine powdered talc, which is immediately spread about on it with a soft camel-hair brush, and then rubbed off with same.

I then take another old silk handkerchief, kept also for this special purpose, and rub the glass with gentle pressure in order to remove any of the talc left behind by the brush. The talc must be completely removed, otherwise I find the prints will stick.

When the talc is thus thoroughly removed, the piece of glass is taken up with the pneumatic holder, and coated with collodion in the ordinary way, and placed on end to set.

After this preparation I leave the glasses twelve hours or so to rest, and so divide the enamelling process into two distinct stages.

I do this not only as a matter of convenience and as a division of labour when I have a number of prints to enamel, but moreover I found by experience that a continuation of the process soon after the coating of the glasses with collodion is very much liable to cause a sticking of the prints.

2nd. The essentials for the next stage are some Nelson's No. 2 gelatine, and some very thin cardboard—so thin as to be more like drawing paper than cardboard. The gelatine is put in a large jam-pot, two ounces to ten ounces of water, and left there for an hour or so until it has completely swelled. The cardboard is cut into pieces of *exactly* the same size as the prints.

When the gelatine has swelled fully in its pot, I place the pot in a vessel of boiling water until the gelatine melts in the water in which it has been steeped. I have a clean porcelain dish ready, and thoroughly warmed, and into this I strain my gelatine solution through a piece of muslin.

To ensure that the gelatine will not thicken or cool during the process, I place the dish of strained gelatine into a galvanised bucket, or some similar vessel, in which there is a little water, and this bucket I place on a little tripod over a spirit lamp.

The prints, if dried and curled or rolled, are of course immersed in the meantime in a vessel of clean water and made to expand and become limp.

We are now quite ready for the next stage, with which I proceed thus:—

I take a collodionized glass and gently drop it prepared side upwards into the dish of gelatine in the bucket. Immediately I take a limp print and put it face downwards into the same dish. After two or three seconds I lift the glass with the print resting on it out of the dish, draining for a few seconds one corner downwards. It is then placed on a table or other flat surface, and the roller squeegee is carefully and *quickly* passed over the print, which should now rigidly adhere to the glass. A cloth is then used to remove superfluous gelatine from the unprepared side of the glass, as also from its edges, and it is set aside while others are treated in a similar manner. When all are thus treated, the cardboard pieces are immersed *one by one* in the dish of gelatine, and when it is seen that all are saturated with the gelatine solution a glass with print attached is placed on a flat surface—a piece of cardboard is *very quickly* removed from the dish and fitted evenly on the back of the print. The roller squeegee is used as before, and the process so far is complete.

To assure that the prints will invariably come off the glass when dry, a very precise mode of procedure in the drying process is essential. What I find to be a principle is this:—*Slow drying at first until the excessive moisture has left the gelatined print and cardboard, and after that very fast drying.*

My system of carrying this out is as follows:—

I place the glasses either in warm sunshine or before a fire at such a distance that the heat will be about equal to ordinary summer heat. I leave them there for about half-an-hour, when I dry them very fast by means of paraffin lamps after this fashion. Two simple square boxes are procured. The dimensions of these square boxes are such that the side of the square will be a little more than the breadth of two half-plate enamelling glasses standing on end. Conceive these boxes to have no bottom, to have the sides projecting 3 inches over the lid, to have the lid as high as the centre of the flame of your paraffin lamp, and finally to have a square aperture in the centre of the lid large enough to admit the funnel of the lamp. This box is placed down over the lamp, the glasses are arranged around the flame and standing against the projecting sides. The lamp flame is feeble at first, but is gradually increased as the drying goes on. Thus each paraffin lamp will dry at a time eight half-plate prints, and this drying will not take more than three-quarters of an hour.

With prints treated as I have indicated there is an invariable forewarning of the separation of the prints from the glass, and it is this:—An occasional *tick* is heard, becoming more frequent after a time, and when it ceases, by cutting about an eighth of an inch from off the print all round with a small sharp knife, it will be found to come off with its beautiful gloss.

I am an amateur of short standing, and I have been told by an experienced professional that he never enamelled prints better than some done by me, following with scrupulous exactness the details I have here given.

I send by this post one of the first prints I have done in accordance with above.—Yours, etc.,

PATRICK KENNEDY.

[The print sent has a very good surface.—EDITOR.]

The Speed of Plates.

We have received the following correspondence for publication:—

[Copy.]

Appleton, Widnes, Nov. 15th, 1892.

Dear Sirs,—Our attention has been called to your advertisement in last week's photographic journals, in which you state that your plates have a speed of 100 upon our scale.

We must ask you to kindly inform us upon what ground this statement is based.—Yours truly,

(Signed) F. Hurter and V. C. Driffield.

To Messrs. The Imperial Dry Plate Co., Ld.

Cricklewood, London, Nov. 17th, 1892.

Dear Sirs,—Referring to your letter of the 15th inst., we shall esteem it a favour if you will kindly let us know if we are wrong in estimating the ratio between the "Watkins" scale and yours, as 3 is to 2, a ratio, we believe, to be generally accepted as correct. —We are, dear sirs, yours faithfully,

The Imperial Dry Plate Co., Ld.

(Signed) T. E. H. Bullen, Secretary.

To Messrs. Hurter and Driffield.

Appleton, Widnes, Nov. 18th, 1892.

Dear Sirs,—We are obliged for yours of the 17th inst., which confirms the conclusion to which we had arrived, that the speed 100 you quoted as the speed of your plates upon our scale was a pure inference, based upon Mr. Watkins' estimation. Whatever connection Mr. Watkins may have stated to exist between his speed and our own has never in any way been acknowledged by us; nor have we ever given a thought to the subject, for the simple reason that Mr. Watkins has no system of speed determination, beyond that open to every photographer, namely, camera test. We cannot, therefore, for one moment admit his speed as a basis upon which to estimate ours. Our own method of speed determination is the outcome of years of laborious investigation, specially undertaken with a view of superseding camera tests. It is based upon actual measurements of the work done by the light, and is provided with a scientific nomenclature and system of units. From what we have said, we think you will allow that we are justified in objecting to platemakers using our names at all, unless they actually adopt our system. Such a course is clearly calculated to mislead the public, who naturally infer, when the speed quoted is associated with our names, that it has been ascertained by our method.

Should you at any time care to adopt our method yourselves, you may count upon our cordial assistance, and we trust you will regard what we have said in the friendly spirit in which it is offered. We do not, for a moment, imply that your plates may not reach a speed of 100 upon our scale, but it is in the highest degree improbable that this figure accurately represents their speed. We should like, with your permission, to publish this correspondence, including any reply to this letter you may care to favour us with, as we think it may prevent misunderstanding in the future, and that it is only fair to those plate-makers who have adopted our system to take this course. —Yours truly, (Signed) F. Hurter and V. C. Driffield.

To Messrs. The Imperial Dry Plate Co Ld.

Cricklewood, London, Nov. 21st, 1892.

Dear Sirs,—In reply to your letter of the 18th inst. we have somewhat anticipated your reply, having withdrawn your names from our advertisements, it being far from our desire to have a controversy with you or prejudice you in any way.

You are, however, doubtless aware that plates are now in the market branded with a certain number on your scale, and "*equal to . . . on Watkins'*." Statements to the same effect may be found in photographic literature every week, comparisons being made, as one would between Fahrenheit and Réaumur or Celsius. We cannot therefore see that the publication of the correspondence that has passed between us, would help to solve the question whether 150 Watkins' is equal to 100 Hurter and Driffield.

Should you decide to publish our letters, we should probably let the manufacturers who are pledged to one or *both* systems discuss the matter.—We are, dear sirs, yours faithfully,

The Imperial Dry Plate Co. Ld.

(Signed) T. E. H. Bullen, Secretary.

To Messrs. Hurter and Driffield.

Appleton, Widnes, Nov. 24th, 1892.

Dear Sirs,—From your letter of the 21st inst. we gather that you have failed to understand the position we have taken up. We have no objection whatever to plate manufacturers who have adopted our system deducing the Watkins' speed from ours, but we do object to our speed being inferred from Mr. Watkins'. Our object in publishing this correspondence has nothing whatever to do with deciding what relationship exists between Mr. Watkins' plate number and our speed, but simply arises from a desire to do justice to those plate-makers who have taken up our method and who are earnestly striving to carry it out impartially and thoroughly. Furthermore, in the interests of the photographic public, we consider that any quotation of our speed should be based upon an actual determination, and not upon an inference.

In conclusion we again ask you to accept the assurance of our good will, and we remain.—Yours truly,

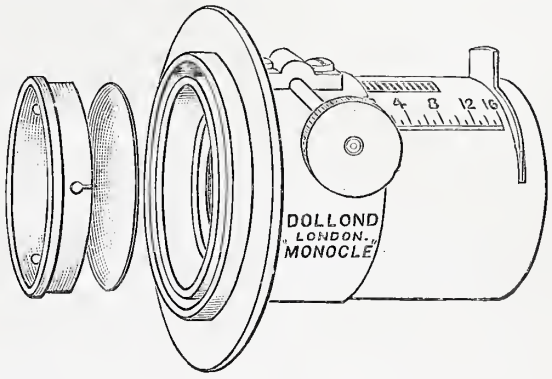
(Signed) F. Hurter and V. C. Driffield.

To Messrs. The Imperial Dry Plate Co. Ld.

Apparatus.

DOLLOND'S "MONOCLE."

Under this name Messrs. Dollond and Co., of Ludgate Hill and Old Broad Street, have introduced a set of periscopic lenses with mount, as shown in the diagram. Four lenses, which vary in foci according to the size of the plate for which they are intended all fit into the back of the mount and are kept in position by a spring ring. As will be seen from our article on p. 327 (Amateur Photographer, November 4th, 1892), it is necessary to make a correction after focussing for the non-coincidence of the



actinic and visual foci, and on the mount is a scale divided into sixteenths of an inch for this purpose, the correction being effected by the rack and pinion. Waterhouse stops are also provided.

We have actually tried these lenses for portraiture, and they give exquisite softness, which, in the hands of an artist, will be of great value. In landscape work they give that softness of out line which is noticeable in some of the best work shown, and at the price of 27s. 6d. they should find many friends.

CHRISTMAS AND NEW YEAR MOUNTS.

Christmas is again close at hand, and many of our readers will desire to send out their own prints as Christmas and New Year Cards. Messrs. Hannam and Co., 25, Soho Square, have sent us samples of cards for this purpose neatly put up in boxes, or they may be obtained loose. The mounts are extremely artistic and neat, and are well worth the attention of all our readers. The prices vary according to size, averaging about 2d. per mount.

MOUNTS FOR CHLORIDE PRINTS.

The same firm have also sent us samples of mounts which they are placing upon the market specially for chloride prints. They are made with cut-outs, and so that the print is slipped into place as in albums, thus avoiding all trouble with mountants, and the surface, either glazed or matt, is thoroughly preserved. They may be obtained either with plain or fancy cut gold bevelled edges, and, like all this firm's work, are of the best quality of finish.

MARION'S ART SLIDES.

Marion and Co., of 22 and 23, Soho Square, have sent us half a dozen fine art studies by Downey, which are reproduced in collotype and which are all strong proofs that if photography is not art in the hands of a master it can come as near to art as possible. The prints measure about 10 by 8, and are printed in collotype on large boards, and every study is well worth framing. The price is only 1s. 6d. each.

General and Photographic Chemistry. — XII.

By E. C. CONRAD, F.C.S.

THE NON-METALLIC ELEMENTS AND THEIR COMPOUNDS.

(*Continued from page* 302.)

COMPOUNDS OF CARBON AND OXYGEN.—Carbon combines with oxygen in two proportions, forming carbon-monoxide, CO, and carbon-dioxide, CO_2.

Carbon-Monoxide, CO=28. This gas is always produced when carbon is burnt in a limited supply of oxygen. M.: (1) by heating formic acid with strong sulphuric acid. Eq.: $CH_2O_2+H_2SO_4=H_2SO_4+H_2O+CO$. The sulphuric acid decomposes the formic acid, and combines with the water produced. (2) By heating oxalic acid with sulphuric acid. The oxalic acid is decomposed, producing water and a mixture of carbon-monoxide and dioxide; the carbon-dioxide can be absorbed by passing the mixed gases through a solution of caustic soda or potash. (3) By heating powdered crystallised potassium ferrocyanide with about ten ten times its weight of strong sulphuric acid. Eq.: $K_4FeC_6N_6+6H_2O+6H_2SO_4=3(NH_4)_2SO_4+FeSO_4+2K_2SO_4+6CO$. P.: Carbon-monoxide is a colourless gas almost insoluble in water, 100 volumes of which dissolve at 15°C about 2·5 volumes of the gas. It burns with an exceedingly hot blue-coloured flame to form the dioxide. Carbon-monoxide is a very poisonous gas, but its action is peculiar; it forms with the hæmoglobin of the blood a bright red-coloured body called carboxy-hæmoglobin, which is decomposed with difficulty; whereas the body formed by the union of oxygen and hæmoglobin (oxy-hæmoglobin) is easily decomposed. Charcoal and coke always produce carbon-monoxide when burnt, and in badly ventilated rooms their combustion quickly produces death.

Carbon Dioxide, CO_2=44.—Oc.: In the atmosphere in relatively small but actually enormous quantities; it is evolved from subterranean sources, and is a product of respiration. M.: (1) By the combustion of carbon monoxide or any substance containing carbon in an excess of oxygen; (2) by fermentation, as the action of yeast on solutions of sugar in brewing, etc.; (3) by decomposing any carbonate with any acid; thus calcium carbonate (chalk or marble) acted on by hydrochloric acid produces free carbon dioxide. Eq.: $CaCO_3+2HCl=CaCl_2+H_2O+CO_2$. P.: Carbon dioxide is a colourless, invisible, incombustible, irrespirable gas 1·5 times as heavy as air. Under a pressure of thirty-six atmospheres at 0° C. this gas is condensed to a liquid and can also be obtained as a solid, having in this condition a temperature of —78° C. On mixing this solidified gas with ether it evaporates, producing such intense cold that many gases are frozen by the resulting temperature. Water dissolves the gas (100 volumes at Stp. absorbs 180 volumes of the gas), and the solution forms carbonic acid H_2CO_3, which feebly reddens litmus and is decomposed on boiling, CO_2 being given off. Carbon dioxide is often called carbonic acid, but this term is incorrect and should only be applied to its solution. On an increase of pressure water can be made to take up larger quantities of the gas, but the excess is expelled on the pressure being released. This is the cause of the effervescence of many natural mineral waters and also of champagne, soda-water, lemonade, etc. The dioxide is produced in wines by fermentation, and is forced into the aerated water under a pressure of from four to six atmospheres (say about 75 lb. to the square inch). *The Carbonates.* Carbonic acid having two atoms of replacable hydrogen is said to be diatonic or dibasic, and forms two series of salts; thus with sodium there is (1) acid carbonate of soda or bicarbonate, $NaHCO_3$, (2) sodium carbonate, Na_2CO_3. (The bicarbonate is always met with commercially as a white, impalpable powder, the carbonate generally in crystals containing $10H_2O$ as ordinary washing soda. *Test.*—A solution of perchloride of mercury gives a red precipitate with a solution of the carbonate, and a white precipitate, which turns red on boiling, with a solution of the bicarbonate). The carbonates of the alkaline metals are formed by passing carbon dioxide into a solution of caustic soda or potash, or into ammonia. Eq.: $2NaHO+CO_2=Na_2CO_3+H_2O$, and the carbonates of all the other metals are produced by heating their salts with the alkaline carbonates or by boiling the salts in solution; thus, barium chloride heated with sodium carbonate produces barium carbonate and sodium chloride. Eq.: $BaCl_2+Na_2CO_3=BaCO_3+2NaCl$. The carbonates of the alkalies are soluble in water. All other carbonates are insoluble in water, but some dissolve in carbonic acid; thus, if carbon dioxide is passed into lime-water (calcium oxide or caustic lime dissolved in water) a white precipitate of carbonate of lime ($CaCO_3$) will be thrown down, but if the gas is still passed through this precipitate will be again dissolved, owing to the formation of the bicarbonate of lime ($CaCO_3CO_2$) (see hardness of water). Barium, magnesium, and iron are the principal other metals that act in this way. The uses of the carbonates in photography, etc., will be described under the headings of the respective metals. *Tests.*—All carbonates are decomposed by acids with evolution of carbon dioxide, which can be recognised by reaction with lime-water. All carbonates, with the exception of the potassium, sodium, and ammonium carbonates, are decomposed by heat, forming an oxide or leaving the metal, and giving off carbon dioxide and sometimes oxygen. Barium, strontium, and calcium carbonates require a high temperature.

COMPOUNDS OF CARBON AND NITROGEN.—Carbon and nitrogen do not combine directly, but by indirect means their combination can be effected.

CYANOGEN, C_2N_2 (=52).—M.: By heating mercuric cyanide. Eq.: $Hg(CN)_2=Hg+2CN$. P.: Cyanogen is a colourless gas, of a peculiar odour, soluble in water, one volume of which dissolves about 4·5 volumes of the gas. The aqueous solution soon decomposes. It does not attack mercury, and can be collected over that metal. Under a pressure of 4·5 atmospheres, or at a temperatue of —20° C. the gas is condensed to a liquid of S.G. 0·86; at lower temperatures it freezes to a crystalline mass. Cyanogen burns with a purple flame, forming carbon dioxide and liberating nitrogen. Eq.: $C_2N_2+O_4=2CO_2+N_2$. Many metals unite with the radical CN (usually written Cy) to form cyanides, many of which have a blue colour, hence the name cyanogen (blue producer).

PARACYANOGEN, $CxNx$.—This compound, the exact composition of which is unknown, appears to be condensed cyanogen. It is a brown substance, and can be produced by heating silver cyanide in a sealed tube. On heating in an atmosphere that has no chemical action on it, paracyanogen is converted into cyanogen without separation of carbon.

Stockport.—A meeting of the above society was held on Wednesday 23rd ult., at which Mr. G. Hidderley, showed about 100 lantern slides of Switzerland from negatives taken during a holiday there in the summer. The whole of them were taken within five days, and their uniform excellence caused great admiration.

"Mezzotype" and other Rough-Surface Silver Papers.

We had purposed this week giving some fuller particulars as to the use and manipulation of Mezzotype and other rough-surface papers. Pressure upon our space at present, and the fact that fresh information is so constantly coming in from the very many photographers who have now taken up this paper, will prevent our present notes from being as complete as we would have wished, so that we may return to the subject at a later date.

The increased use and inquiry for a rough-surface printing paper has been generally remarked, and its popularity must have struck any one who has carefully considered recent exhibitions.

It is between two and and three years ago that the present writer pointed out to Dr. Hezekiel, of Berlin, the desirabiliy of placing upon the market a rough drawing paper, salted and sensitised for silver printing, and for this purpose samples of Whatman's, and Arnold's unbleached drawing papers were supplied as specimens to Dr. Hezekiel or his agent in London. The sensitised paper which resulted from these proposals was eminently satisfactory in every respect, except, perhaps, in its keeping quality. It yielded a very vigorous image, often very bright and transparent, but the paper suffered by being kept, and a calcium box, together with the greatest care, was necessary to preserve the stock of paper. It may here be remarked that two large prints, which we made in 1890 and which have been to several exhibitions, and have otherwise been hanging on a well-lighted wall, show not the least indication of fading or yellowing; the one is gold-toned, and the other toned with platinum.

Subsequently we proposed the manufacture of this rough-surfaced printing paper to two London makers—Mr. Otto Scholzig, whose extensive manufacture of ordinary sensitised papers prevented his going further with the matter than the preparation of the first few sheets; and secondly, to Mr. Blackie, of the Blackfriars Company, from whom we received a quantity of sensitised Whatman's paper, some of which was nearly very successful.

Again, the Fry Manufacturing Company brought out their "Soltype," which, although not precisely a *rough* surface, was a movement in the right direction. The Imperial Photographic Company have, we believe, also undertaken to sensitise rough paper, but, so far as we are aware, nothing much has been done by them. The probability is that papers of this class require such excessive care and watchfulness that in the ordinary course of commercial manufacture it would not pay to prepare, and at present, large as the demand is becoming, it is probably not sufficiently to warrant any very especial arrangements on the part of the paper sensitiser who has plant and work-people already employed in regular goods.

With Mezzotype, however, the circumstances are somewhat peculiar, and seem to give the paper a prestige and probability of continued success which its predecessors have hardly possessed. Mr. C. F. Robinson, who is the prime mover of the Carlotype Company, is an artist by profession, and a successful exhibitor at the Painter-Etchers' Exhibition, of which society he is a Fellow. Finding that Mr. Robinson was interested in the coating of photographic papers, we at once saw that his artistic sympathies might be drawn upon to attempt the preparation of certain papers especially suited for artistic purposes, and we think that thus far, at least, Mr. C. F. Robinson's Mezzotype paper is the most uniform and altogether successful paper of its kind which has yet been produced. To this Mr. Robinson's practical knowledge and his personal direction and superintendence of its preparation is probably the chief contributory.

In the first place we should like to point out to our readers that with regard to rough surfaces generally it is a fallacy to suppose that they are only suitable for prints of large size. We unhesitatingly assert that there are many quarter-plates, pictures which are admirably rendered on very rough paper, but as it is a matter which cannot well be proved by argument, we can only ask that it be put to a practical test and tried.

Then as regards colour. Fashion just at present decides that sepia brown is the *sine qua non* of a good picture, and whilst we readily admit the pictorial charm of this colour we are by no means ready to let every other give place entirely to it.

Now in producing pictures on this Mezzotype paper—and we take it for granted that it will only be employed for pictorial, that is, artistic purposes—the crux appears to be in the toning, so as to secure a pleasing and desirable colour and in this direction alone a very large field for experiment lies open. At present, so far as we are aware, only gold "toning" and platinum "toning" have been attempted, and it is merely some notes of these two methods which we propose at present to give.

To commence with, such serious doubts have been cast upon the reliability and permanency of the hyposulphite of soda and gold toning and fixing bath that we shall abandon it entirely, but, for the use of those who may care to try it, the formula given by the Mezzotype manufacturers is as follows:—

Hyposulphite of soda	1 oz.
Water	10 „
Chloride of gold sol. (15 gr. to 1 oz. water)	10 minims

Toning and fixing is here performed in one operation. The print is placed in the above bath without previous washing, and kept moving for twenty minutes. On removal, wash thoroughly for about two hours in running water.

There seems to be nothing in the constitution of Mezzotype paper which should demand any different toning formula to those ordinarily used for albumenised silver paper, except that the bath must be very much weaker. The Mezzotype paper is extraordinarily rich in silver, and it will be best to dilute usual toning baths with their own bulk of water. Toning will perhaps be slower, but the alteration in colour will be more uniform and regular.

The combined toning and fixing bath as used for the gelatino-chloride papers, composed of sulphocyanide of ammonia and chloride of gold, may be successfully employed, but the reduction which takes place in the image is often so great that it will hardly recommend itself.

We have submitted a large number of prints on the Mezzotype paper to the above combined bath, to the acetate of soda and gold bath, and also to the borax bath, and are of opinion that if it be desired to tone with gold, then it is with the latter bath that the most satisfactory results are to be obtained.

The point for consideration in deciding upon the bath to be used is probably chiefly one of colour. There is at the present time a very wide-spread desire to secure a pure sepia brown colour, and it must be confessed that it is this colour which we have found it most difficult to get. The brown colour obtainable in silver papers is almost invariably suffused with a peculiar pink hue, and one which is to our

taste as undesirable as it is difficult to get rid of. We recommend, however, the following proportions:—

Chloride of gold	1 gr.
Borax	20 „
Distilled water	20 to 30 oz.

The print should be about as deep as ordinarily, and must be well washed in running or frequently changed water, the thick soft paper being very absorbent, and a great deal of free silver will leave it, making its presence seen by the milkiness imparted to the water. It will be noted from the above formula that our toning bath is about *half the usual strength*, and consequently the process of toning will be a very slow one. In like manner it is very important that the "fixing" bath of hyposulphite of soda should be similarly diluted, 1 oz. hypo to 8 or 10 oz. water being about the best.

In this way we have succeeded in getting a fairly wide range of colours, from a sienna brown to a cool purplish-grey, these two representing the extremes of the gamut, and are the colours most readily obtained. The various shades of browns and blacks which come between appear to be involved in some degree of uncertainty—that is to say, it is almost impossible to foreteil the exact colour any given print will be when finished, and, moreover, having secured the precise colour desired, it seems that to repeat it is more dependent upon chance than intention.

Such an element of uncertainty is obviously a drawback when producing prints with a definite intention and aim. Still, we think it is fair to conclude that the fault is more attributable to an imperfect knowledge of the paper than to any integral character thereof, and that a little further experiment should remove the fault, if there be one, and place the colour of the print directly within the operator's control.

Quite recently we have come rather nearer to this position by stopping the toning when the print is something short of the desired colour, and allowing for a certain alteration during fixation. Thus we made up three separate borax and gold toning solutions of different strengths, and three prints of various depths were placed one in each respectively. The print in the strongest bath was somewhat over-printed. This, however, was removed first, the colour then being a decidedly ruddy brown. After fixation this was changed to a much cooler and not unpleasant shade. The other prints were treated in the same manner, one of them being more lightly printed, but in a weaker bath took about the same time to tone to the same ruddy brown at which the first was stopped, and the third print being in a very weak bath, took a very long time to reach the same colour. Both these latter when fixed were *within a very little* of giving the same tint as the first print finished.

The prints have a very different appearance when dry as compared with wet, and the hypo bath also, as shown above, will usually take some of the warmth out of the colour, and the desired control to which we have referred may perhaps be ours if a little closer acquaintance be made with some of the specific characteristics of this paper.

In toning with platinum we have tried two well-known formulæ, one of which succeeded admirably with the rough silver paper supplied to us by Dr. Hezekiel in 1890, but as yet we have not secured such pleasing results as with the gold. The formula just referred to is that given by Mr. Lyonel Clark in his little book, "Platinum Toning,"* but that, as when toning with gold, it is better to dilute very considerably with water, thus:—

Potassium chloroplatinite solution, 60 gr.; water, 2 fluid oz.... ...	1 drm.
Nitric acid	3 or 4 drops.
Water	16 to 20 oz.

We have lately seen some excellent prints of a deep brown colour, with which the above bath was used at a temperature of about 70 or 80 deg. Fahr.

In these cases the prints were in the first place a good deal over-printed, then toned a good deal longer than appeared necessary: that is to say, the prints were not removed from the bath when the desired colour was arrived at, but allowed to continue some time longer, the deep brown tint returning in the hyposulphite fixing bath. For our own part, however, we have obtained better colour when using the bath cold and of greatly reduced strength. Another platinum formula which works well with the gelatine-chloride papers and has been successful with Mezzotype, is the following:—

(1)

Neutral oxalate of potash	3½ oz.
Potassium phosphate	1¾ „
Distilled water	32 „

(2)

Potassium chloroplatinite	60 gr.
Distilled water	3 oz.

Six volumes of No. 1 to be taken with one volume of No. 2.

With this a pleasant warm grey can be pretty well relied upon by pushing toning as far as it will go, this provided that the print is fairly strong.

With regard to the application of rough surfaces for pictorial work, we should like to point out that whereas those who in our own time first adopted rough-surface papers for landscape pictures, did so with a definite intention, and, employing it intelligently, illustrated thereby some of its advantages. The great republic of photographers always ready to take up a new thing heard these rough surfaces admired and commended by those whose opinions carried weight, and forthwith set about using rough surfaces, apparently under the impression that one had but to print any reasonably good negative on rough paper to ensure an artistic picture, and hence now that in this Mezzotype such a paper is obtainable at a moderate cost, there seems some danger that we shall shortly have rough paper prints *ad nauseam*, and already we fear the faults and misapplication of it are quite as, if not more, often exemplified than the advantages. The subject, the character of the scene, and similar considerations should be duly weighed, and the printing process selected and decided upon accordingly.

A rough surface and an adaptability to warm "tones" is by no means the only characteristics of Mezzotype paper. A print upon it compared with a print by some other process—say, platinotype—will at once illustrate this. For instance, a high light in the landscape which is somewhat over-dense will often print through on Mezzotype or an ordinary silver paper when it fails to affect the platinotype or bromide; this means that the resulting print is *flatter* with a preponderance of half-tone, a quality well worth bearing in mind when the negative is a little hard or under-exposed, also when double printing is resorted to, as, for instance, when introducing clouds from a second negative, or in combination printing the advantage of a "print-out," a process in which we are able to watch the progress, will be obvious enough.

We believe, in intelligent hands and with increased knowledge of its capabilities, a great deal may be done with the Mezzotype paper, which will go to advance the artistic status of photography generally.

*"Platinum Toning," Lyonel Clark. Hazell, Watson, and Viney, Ld., Creed Lane, Ludgate Hill.

Rational Development.*

By J. Simkins.

Our worthy and esteemed Secretary, to whose kindness I am indebted for the invitation to read this paper before you, has, as I think, very judiciously limited me to half an hour. He does not suppose—you do not suppose—that I can tell you everything about development in thirty minutes, but I shall hope, by touching lightly upon certain essential points, to make clear to you my own idea of what may be considered a rational method of development.

And, first, I must say a word about exposure, for exposure and development are so intimately connected one with the other that it is almost impossible to leave out of your consideration the one while treating of the other. I am aware, gentlemen, that this question of exposure is the point of divergence between myself and those photographic friends who take the trouble to think anything about me or my work, and I am conscious of some self sacrifice in coming here to-night—I will not say to be laughed at, but to be smiled upon for my eccentricities. But, in spite of all that, I have absolute faith in my method, and I shall not ask my friends to perjure themselves by saying the same thing about theirs. Please understand that I have not the slightest desire to under-rate the methods employed by those who differ from me—methods that may be described generally as the endeavour to give each subject a correct exposure (so-called), and to obtain perfect negatives by the use of a so-called normal developer.

I have seen—indeed, I am constantly seeing—very excellent results obtained in this way—results, however, in no way superior to those gained—not by me—by a competent manipulation of the processes I am about to describe.

Well, to return to this question of exposure. The orthodox way of exposing a plate is first of all to focus the view, then to insert a sufficient stop, and next, with the value of the rapidity of the plate clearly fixed in the mind as a numeral, to calculate the correct exposure.

What is a correct exposure? The text-books tell us that when the darkest shadows of a subject have received the critical exposure, that is, when the deepest shadows have received the least possible intensity of light the action of which a given developer can make visible, then that subject has had a correct exposure, and I believe that to be true. But if, as too frequently happens, the critical exposure of the shadows is not reached, or is exceeded, what happens? Why, in the first instance we have a hopelessly under-exposed negative, which no skill, save that of retouching or dodging, can make perfect, while in the second instance we have an over-exposed plate, which will be ruined (in cases where the correct exposure has been very much exceeded) unless we very quickly modify the developer.

It was this glorious uncertainty in exposure that prompted me some time ago to adopt the method I now employ, and which renders me practically independent of any but the simplest calculation before exposing a plate.

Well, gentlemen, we have seen what correct exposure is said to be, let us now see what correct or normal development is supposed to mean.

With every box of plates that you buy you will get a printed formula for the composition of your developer, and you cannot do better than adhere to it. For a correctly-exposed plate the developer mixed in the proportions recommended is called the normal developer.

We will not now take into consideration the merits of this or that developer, but will assume that the alkaline-pyro developer—the alkali being ammonia—will serve our purpose.

In a pyro-ammonia developer the pyro is the real reducing agent; sulphite of soda does not influence the production of the image in any way, but is used to prevent the discolouration and rapid deterioration of the developer by oxidisation; citric acid and nitric acid serve the same purpose; and bromide of potassium acts as a restrainer; while ammonia is simply the accelerator, rendering the pyro active and enabling it to do its work.

Given then a plate *accurately timed for a particular developer*, we need have no hesitation in at once pouring on the normal developer in the proportions recommended by the plate-makers; always provided that the subject does not require special treatment, as the softening down of the high lights in a too brilliantly lighted picture, say the windows in an interior; in such case we must modify the developer, and it is in this process of modification, requiring at once, in many instances, judgment, precision, and promptitude, that we find the rock on which so many amateurs split. A skilled photographer (and I do not think that any society can claim as members a larger number of skilled amateurs than the Birmingham Photographic Society) takes a negative in his mind's eye as well as on his plate, and works for a certain result, so modifying his processes as to gain it in the majority of instances; but the inexperienced are too prone to treat all plates and all subjects alike, and the only results in nine cases out of ten are discomfiture and disgust.

We have seen that a correct exposure is one in which the darkest shadows of a subject receive the smallest intensity of light that a given developer can make visible, and that if this exposure is very much prolonged, say for three times the duration, the plate is to be considered over-exposed. But is it really over-exposed? Why should an exposure which with a normal developer gives a perfect result, be considered a correct exposure, while an exposure greatly exceeding it in duration, *but giving equally perfect results* under different treatment in development, be considered an over-exposure?

I do not believe in over-exposure until it is manifest in the developed negative. It has been laid down that there is an absolutely correct exposure for every subject. Granted, but which is really the most rational way of gaining the *results* of that absolute correctness—to stand with the cap in your hand, and to endeavour in a moment or two to give the exact value to the concomitants of light, stop, plate, distance, shadows, and several other things, or to say, "I cannot with certainty gauge these values; I think 4 sec. would do it, but I will make sure and give 20 sec., feeling confident that the EQUIVALENT of correct exposure will appear during development *and may then easily be secured as such*"?

You are all, I think, aware of the difficulty of giving any particular subject an absolutely correct exposure, and are prepared to admit that many failures are the outcome of errors of judgment in this respect. I would ask you then if it would not be an advantage to be practically independent of exposure, provided that we have a method of development which will give us the same results, in a simpler manner, as a correct exposure and a normal developer would do? I am of opinion that that would be a very great advantage, and I will now lay before you the way in which you may make the most of this advantage.

We will suppose, if you please, that we have focussed our picture and inserted the necessary stops. We look at the subject; any subject will do, and we will suppose it to contain deep shadows in the foreground, and a brightly lighted distance, mountains, for instance We can ignore the distance and consider only the shadows in our estimate, committing to memory, however, the general lighting of the scene. We think 4 sec. will be enough, but are we sure? No, we are not—if we could give 8, 16, or 20, we should be sure that we had given the critical exposure to the shadows; any exposure in excess of that need not trouble us at all.

But you will say that would be excessive over-exposure! Well, I beg to dissent; no one at this stage is justified in saying the plate has been over-exposed. If the completed negative shows any trace of the so-called excessive exposure, then your criticism will be just, but if a perfect negative is the result, how can you say the plate has been over-exposed? So much for the exposure. We will now mix our developer which is practically a standard pyro-ammonia developer: To 3 oz. of water for a whole-plate, we add 15 gr. of sulphite of soda, ¾ gr. of citric acid, and 6 gr. of dry pyro. In another glass we will put 2 dram. of ammonia solution, made up as follows:—Ammonia ·880, ½ oz.; potassium bromide, 40 gr.; water, 10 oz. Such a developer contains 2 gr. of pyro, 2 mims. of ammonia, ⅓ gr. of bromide, 5 gr. of sulphite of soda, and ¼ gr. of citric acid to the ounce, when used in normal proportions, and is really the formula of the maker for the plates I always use, viz., the Paget Prize Plates.

Removing now the backing from the plate (you see I back my plates, and I advise you always to do so under all circumstances. I am sorry time will not permit me to explain to you fully now the great importance of doing so), I place it in the dish, and pour on the 3 oz. of pyro solution, *without the alkali*, and move it about until the developer lies evenly on the film, no air bubbles showing; then we can leave it with a cover over the dish while we make other preparations. We will pour about ½ dram. (or one-fourth the normal quantity) of the ammonia solution into the 4 oz. measure, and returning the solution now on the plate to the glass, once more pour it over the plate. The developer is now slightly alkaline. Do not be anxious if the picture does not show quickly, it rarely does so with so weak a develope; it is all there, and by and bye, say in a minute or so, the picture will show, and if you have not overdone the ammonia for the particular exposure, will grow is if correctly exposed, *only more slowly*.

The plates I am developing received the one 30 sec. exposure with stop *f*/64, the other 150 sec. at the same time, and with the same plate and light, and I shall hope to show you that the one which had 30 sec. is correctly exposed for the normal developer, and that the plate which had five times as much will produce an equally good, if not better, negative.

We are now developing the one which received 150 sec. There need be no hurry; indeed, the less the better—you will have time to coax forward more quickly the detail in a very deep shadow, or you

* Read before the Birmingham Photographic Society.

can subdue a very brilliant high light with weak bromide solution; indeed, the facilities for making up for some of the shortcomings of the commercial dry plate, in giving correct values of light and shade, are unlimited.

Watch your picture closely, and when your shadows indicate that you have obtained the equivalent of a correct exposure as regards detail, add a drachm of citrate of ammonia solution to the developer and pour it back on the negative. Any detail that at this stage may still lie latent, so to speak, in the film, at once ceases to exist. At the moment of the addition of the ammonia citrate, the deepest shadows should show little or no change under the action of the developer.

We have now the same result as regards detail, gradation, etc., as we should have if the plate had received only the critical exposure. But the plate lacks density. Well that is easy enough to get.

In this dropping bottle I have a solution made up as follows:—Potassium bromide, 200 gr.; ammonia ·880, 1 oz.; glycerine, 1 oz.; water, 6 oz. We will add 20 drops of this solution to the developer and see what happens. The image gradually darkens (if not quickly enough, then add more, but slow intensification gives the best results. You cannot very well fog the plate with it, strong as it is), and in a few minutes we have gained the density we require, and the plate is ready for the hypo bath. Under this process of intensification only the image which was actually formed when we stopped the development of more detail is strengthened. Excessive exposure, as such, ceased to exist upon the application of the citrate, and if we have not erred in our judgment of the necessary amount of detail in the shadows, we shall have produced a negative equal in every respect to a plate said to be correctly exposed and developed by the orthodox method. We have been able to do this with certainty, because development has from the beginning been entirely under our control, and because we have been able to see on the plate what is so difficult to see mentally, the equivalent of correct exposure.

There are one or two points I should like to reiterate. Always back your plates. To my mind to do so is essential in all photography, and especially under the system I have explained to you. A good backing will enable you to obtain results which would be impossible without it. Give plenty of exposure, and make sure of all detail even if in excess of what is really required. Begin development very gently and tentatively. Do not add more ammonia unless necessary, one-fourth of the normal quantity will usually be sufficient. Stop development before the deepest shadows veil over; you will soon learn how much you must make allowance for detail that the after-process of intensification will make visible. And do not consider a plate over-exposed—within reasonable limits—unless through error of judgment in development you have made it so.

If you ask me what are the advantages of this method over the old one, I will say that in my opinion they are these:—

(1) It is much easier to over-expose a plate than to give it a correct exposure.

(2) Development is gradual and perfectly under control.

(3) If we wish a soft negative very full of detail we can have it. If we require the negative to show marked contrasts, or if we wish to brighten a view taken in a bad light, we can have that too, both with the same exposure.

(4) The planes of a picture are more correctly rendered, because these planes are built up slowly in due sequence, and are really controlled by that portion in the shadows which we decide shall show the critical exposure.

(5) The negative does not stain even under prolonged development.

(6) No hasty modification of the developer is even necessary, provided that the plates have been sufficiently, we will say over, exposed. The proportions of the developer I have given you will do for all subjects, from interiors to seascapes; that is to say, you may always commence with 2 gr. of pyro to the ounce, and with one-fourth the normal quantity of ammonia. You will admit that such a formula is simplicity itself. These are a few of the advantages I claim for this method, there are others which will appear in the working.

And now, gentlemen, it is my duty to tell you that not even the merest detail of this method of development can I lay claim to as my own. It was first brought to my notice in a paper by Mr. George Bankart, of Leicester—an amateur almost without peer in the landscape department of photography. If you had seen his pictures you would admit them to be perfect both in composition and technique—indeed, when I tell you that he was associated with Dr. Emerson in the illustration of the most beautiful edition of Walton's "Complete Angler" that has ever been published, you will not doubt what I say. Mr. Bankart's contributions are superb. Well, Mr. Bankart always works in the way I have endeavoured to describe, and it is knowing that, and not—believe me—any consciousness of merit in myself that has given me the courage to address you upon the subject to-night

CITRATE OF AMMONIA SOLUTION.

Dissolve 1 oz. of citric acid in 3 or 4 oz. of water, then add liquid ammonia ·880, until when tested with neutral test paper it is neither acid nor alkaline—that is neutral. Then make up to 10 oz. with water.

In connection with this paper Mr. Simkins developed the two negatives mentioned, and produced both of them equally perfect, and so much alike that you could not recognise which had received the long exposure.

Skies in Photographs,

AND SOME

PRACTICAL SUGGESTIONS UPON COMBINATION PRINTING.

BY JOHN A. HODGES.

NO. I.

THE "printing-in" of a sky from a separate negative by double or combination printing, as it is called, is a method of improving the artistic qualities of the photograph seldom resorted to by the average amateur. It is unnecessary, however, to seek very far for a reason, as combination printing, even in its simplest form, is generally regarded by the uninitiated as a desperately difficult affair, and one quite beyond the skill of any but the most experienced. It is to remove this impression, which is largely an erroneous one, from the minds of the less experienced readers of the AMATEUR PHOTOGRAPHER, that I have undertaken to write this article.

It may be explained at once that it is not intended to give much consideration at the moment to the purely artistic or æsthetic aspect of the subject, and it will also be assumed that the desirability of introducing suitable clouds into the composition when they are absent is conceded. The following suggestions, therefore, will be essentially of a practical nature.

Let me say at the outset, that I prefer, whenever possible, to secure the sky and landscape together upon the same plate, and, unless the reader be wedded to the use of very small diaphragms, this is generally by no means a difficult matter. In work of this kind one's aim should be to represent nature as truthfully as possible; therefore, if it be not practicable to secure the sky upon the landscape negative a second plate should, with as little delay as possible, and without moving the camera, be exposed upon the sky. But in so working, great care must be exercised, for it by no means follows that the particular cloud forms existing at the moment when the landscape was taken will necessarily be those best suited to harmonise with the general lines and balance of the composition.

If an attempt be made to secure the sky and landscape upon the same negative with an ordinary cap, in nine cases out of ten the result will be a failure. Resort must therefore be had to some more perfect means of effecting the exposure. An expensive or very quick-acting shutter is by no means necessary. Indeed, many such are quite useless for this particular purpose, the object being to use an instrument capable of giving a relatively longer exposure to the foreground than to the sky. The particular type of shutter which best fulfils these conditions is that known as the "Blind" or "Window" shutter, by which names the shutters of Place and Tylar are respectively known. In each the principle is the same, the exposure being effected by drawing a blind or curtain up and down in front of the lens, and commencing and ending with the foreground. An additional advantage in this form of shutter lies in the fact that being effected by hand the exposure is absolutely under control, and can, moreover, be graduated so as to cause the foreground to receive, if necessary, many times the amount given to the sky. In practice, after focussing the view, I cautiously draw down the blind until the horizon is just shut off; I then note its position, and when making the actual exposure arrest the descent of the blind when that particular point is reached, and allow the requisite additional time for the foreground before drawing it completely down. When so working, stops smaller than *f*/16 should not be used. This, as I have said, is my favourite method of obtaining skies, and as I have now given it a six or seven years' trial, I have no hesitation in recommending it. Previously I had used for the same purpose an ordinary flap shutter affixed to the lens; the former method is, however, preferable. Conversing recently with Mr. Hepworth upon the subject, he informed me

that thirty years ago the late Mr J. H. Dallmeyer placed a similar shutter upon the market, thus proving that in photography no less than in other matters, "history repeats itself." I have for some time past entirely given up the use of the cap, and now make all my exposures with an ordinary blind shutter, for, besides the special advantage of being enabled to give a graduated exposure, the possibility of accidentally shaking the camera is entirely removed.

The method is simplicity itself, but a little care may be needed at first to avoid over-exposing the foreground, although by careful development an error in this direction can to some extent be compensated for. If the sky and the landscape portion of the negative develop up together, a good result may be expected ; but if, on the other hand, the foreground comes up quickly and in advance of the sky, the dish should be tilted so as to keep the developer over the sky portion of the plate and away from the foreground. If, on the contrary, the sky should make its appearance well in advance of the rest of the picture, the converse treatment should be adopted, but in either case the developer must be kept in gentle motion, and the dish occasionally tilted, so as to cause the whole of the film to be wetted with the solution; this must be done, or the negative will probably be of unequal density when finished.

Skies always afford a target for the critics' darts, and I have on more than one occasion had my own pictures pointed to as examples of unsuitable combination printing, but the critics had themselves fallen into error, for in each instance it so happened that sky and view were secured upon the same plate. But it is right to point out that unnatural and untruthful results may be produced even when this method is resorted to. For instance, if the sky be either under-exposed or under-developed, it will easily be seen that a very false rendering may result. Some judgment, therefore, must be exercised, both in exposing and in developing the plate. In the event of the sky printing too heavily, the negative may be improved by intensifying with uranium, and subsequently discharging the colour from the andscape portion with a brush dipped in a weak solution of ammonia, by the method which I have recently described in detail in the *Photographic Quarterly*.

Before proceeding to describe the actual process of printing-in clouds from a separate negative it may be well to briefly refer to the cloud negatives themselves, and to the taking of them. A collection of cloud negatives should, of course, be as extensive and varied as possible, so that the necessity may not arise of having to combine the same sky with several different landscapes, a practice by no means uncommon with some exhibitors even at the present day. I do not intend to enter into a dissertation upon cloud forms, because any work upon meteorology will give the reader more information upon the subject than would be possible in the short space open to me in these columns.

I now prefer to take my cloud negatives upon celluloid films, because, by being able to print them from either the back or the front, they may be easily adapted to suit the lighting of any particular view, which in practice will be found a great convenience. I have long noticed a great advantage in using isochromatic plates for this work, particularly when sunset effects are attempted, or when the cloud forms themselves are very light and delicate. I have tested isochromatic plates, both of Edwards' and Ilford make, against ordinary plates of otherwise irreproachable quality, upon cloud effects, and have satisfied myself of the undoubted superiority of the isochromatised plates over the ordinary. Indeed, I have been able to secure good, printable negatives of delicate fleecy clouds upon isochromatic plates, to have attempted which on ordinary plates would have been to court failure. It is a mistake to suppose that only heavy, well-defined clouds with strong contrasts of light and shade are necessary ; the use of such for all purposes by the unthinking has done much to bring combination printing into contempt. To combine, for instance, a heavily-printed, stormy sky taken late in the day with a bright, sunshiny landscape taken with the sun high in the zenith can but lead to a glaringly untruthful result, and yet the practice is not an uncommon one. In order to guard against possible errors of this kind, a note of the time of day and the direction of the light, whether from the left, on the right, or in front of the camera, should be made at the time the negative is taken, and these details should be written upon a slip of paper and pasted on the negative itself. The actual exposure necessary will, of course, vary considerably, and will depend upon the nature of the clouds, the time of year, and the time of day when the negative is taken. An elaborate or very quick-acting shutter, however, is not necessary, for if the light be very bright the lens may be stopped down. I find the "blind" shutter to which I have previously referred quite efficient and sufficiently quick for the purpose. In taking bright feathery clouds in good summer light, the exposure, of course, must be short. For such, with the lens stopped down to *f*/32, I find by drawing the blind down as quickly as possible I get a correctly exposed plate. On the other hand, when taking a late sunset effect, with heavy massive looking clouds partially obscuring the sun itself, it is sometimes necessary to give two or even three seconds' exposure. When taking cloud negatives a point of view should be chosen which will give an unbroken and low horizon ; trees or other objects obtruding on the sky line would render the negative useless for the purposes of combination printing.

In regard to development, little need be said. Any good formula to which the worker is accustomed may be used. Personally I prefer pyro and ammonia. A rather weak developer will be found most suitable, and development should not be pushed too far, the object being to produce a delicate and not over-dense negative. A very dense and vigorous negative will render the operation of double printing a more difficult one to perform.

RICHMOND CAMERA CLUB.

At the meeting held on the 21st inst. Mr. F. P. Cembrano, jun., in the chair, Mr. Andrew Pringle delivered his address on "Different Lantern-slide Processes." He said he would neither particularise nor demonstrate any of the known processes, but he would simply discuss the theory and the salient points of each one. At the outset he protested against the idea held in certain circles that no artistic result could be obtained in a lantern-slide. We all know that some people, principally the followers, not disciples, of a defunct worker, despised and condemned this mode of pictorial representation. He maintained that a slide properly made and properly shown was capable of as much artistic feeling as any print. We should not lose sight of the different conditions under which each is seen ; one is viewed directly in our hands by reflected light, the other is indirectly transmitted to the eyes by the light of the lantern on the screen. The gradation must be the same in one case as in the other ; in other words, it must be equally long in the prints as in the slide *as seen on the screen*. This meant that the scale must actually be higher in the slide itself, because it was viewed by transmitted light, and because the image was enlarged very considerably when projected on the screen. The loss of light being extremely great the scale of tones must therefore be considerably higher.

Judging from his own experience, he had no doubt that most photographers had missed the principal point in this branch of photography. They were under the wrong impression that absolutely clear high lights were an important factor, but such was not the case. The highest lights on the slide should be absolutely clear glass, but they would not show as absolutely white on the screen. The very highest light, such as represented in the slide by clear glass, should be very sparingly used. It was the enormous expanses of clear sky and superabundance of high lights that had brought discredit on lantern-slides.

Next in importance were what he would call secondary lights, which are the highest, though *not the very* highest, lights in a slide ; for instance, a whitewashed building, which should not be represented by bare glass, but should show detail.

The half-tones were extremely essential in all pictures, whether slides or prints; the detail should be plentiful and the light moderate, neither too high nor too low. If there was too much light the "tout ensemble" would be hard, while if the half-tones were too low the picture would be flat.

Special attention should be paid to the shadows, as they formed a most important part of the slide. They should be so transparent that all the detail in them should be visible on the screen to a very considerable extent. If an absolutely clear light on the screen was dangerous, great opacity in the shadows was much more so.

It was a fact that not sufficient attention was generally given to the general tone of a lantern-slide. For his own part he believed that warm tones were the most desirable; in fact, a perfect slide should, besides the points above referred to, be of a warm, a decidedly warm colour. The tone obtained on a wet collodion slide toned with platinum was pleasing, but it became wearisome. Cold tones, such as those produced by the ferrous-oxalate developer, were good for scientific subjects, but for artistic work they were very undesirable. He really believed that a large number of cold-toned slides in a lecture produced a cold and fatigued effect on the spectators.

Barring toning processes, there was a great danger of over-exposure and fog when attempting to obtain warm tones by development and increased exposure. This was especially the case with gelatine.

Mr. Pringle said that there were two kinds of slides which he would qualify as intolerable; one of them was of the black and white sort, such as a snow scene in midsummer, a variety often met with; and the other, which was quite as painful to see, was the result of over-exposure. The lecturer then mentioned the leading characteristics of the various processes most in vogue for lantern-slide work.

Beginning with the wet collodion process, he said that the high lights and the half-tones were very good, and the shadows fairly transparent, though liable to too much opacity. If developed rapidly and thin, the results could be modified to a great extent by subsequent intensification. It also possessed the advantage of toning. Some Scotch photographers toned their wet collodion slides with gold, and though it was said that slides so toned would not be permanent, he knew that permanency was quite possible if the toning was properly carried out.

With regard to the dry collodion or collodio-bromide process, he was of opinion that it would almost equal wet collodion in the matter of producing transparent shadows and clear high lights. Warm tones could be produced with great ease, and, the exposure being a short one for contact work and not too long for reduction, he considered this the second best process.

The very finest results were obtained by the albumen process, but being exceedingly slow it was only suitable for contact work. He thought a brief outline might prove interesting to the members. The glass plate was cleaned thoroughly well and carefully coated with iodised collodion. It was then coated with albumen. The albumen should not be whipped up, and it must be iodised. When in a limpid condition it should be poured over the collodion film for about a minute or so. It was then allowed to dry, and here was one of the difficulties of the process, for it was absolutely essential to avoid dust while the plates were drying. The plate is then sensitised in a strongly acid silver bath. The average exposure would be, by contact, about 30 sec. to diffused daylight. The acid pyro developer was the best, and it was preferable to use and to keep it hot during development. The plate was toned and fixed simultaneously in the sel d'or bath. Toning was a great advantage, as any desired colour could be obtained.

The gelatino-chloride process, although it had produced some remarkably fine slides in the hands of Mr. Cowan, he believed was not the best process for lantern-slides. He referred principally to rapid chloride emulsions, in which his own experience was that there was a danger of introducing serious defects in the results.

For all-round work, and provided the proper brand of plate was chosen, the gelatino-bromide process was the best of all processes. The results were almost, if not quite, equal to those obtained by the other processes; warm tones could be easily got without necessity of fogging, and there was no difficulty in getting good half-tones. He recommended a slow emulsion, and he deprecated one containing a mixture of bromide and chloride, or an organic salt of silver. Workers of gelatine plates seldom used a clearing bath, but he thought this a great mistake; in fact, he strongly advocated its use, not only on account of the plate itself, but also of the water used in development, which generally left a deposit on the plate. A saturated solution of alum acidified with hydrochloric acid was the bath he would recommend. Although varnishing the slide was not an absolute necessity, still he thought it was an advantage not to be overlooked. The shadows were rendered more transparent, as by altering the molecular surface of the gelatine the varnish allowed the light to go through better. The more nearly the image approaches the appearance of a stain, the nearer will the slide be getting to perfection. Mr. Henderson's argentic stain, which was an emulsion containing an organic salt of silver, had this quality. It printed right out, it could be toned to any desired colour, but sometimes it was difficult to obtain density by this process.

As to light for contact work, Mr. Pringle said that magnesium was better than daylight, especially for chloride plates.

The lecturer then handed round some specimen slides on albumen and collodion, showing some of the points he had alluded to.

A member asked for the formula for the acid clearing bath.

Mr. Pringle replied that he used the following:—

Saturated solution of alum	20 oz.
Hydrochloric acid	2 drm.

The Chairman said that Mr. Pringle had so thoroughly discussed the matter that he had left him little to say. He agreed with all of Mr. Pringle's remarks, but he thought that to an experienced eye a collodio-bromide possessed a quality and a sparkle that were seldom met with in a gelatine plate. Taking it all round, he inclined to think that collodio-bromide was the easiest and the best process for lantern work. Gelatine plates had the great drawback that the colour of the slide very often changed on drying, and he had even noticed a change take place some months after the slide had been made.

With regard to the clearing bath, he warned the members that though very useful it was liable to spoil a good slide if it was not used with great care. An acid bath containing iron was very good for some slides, as it not only cleared the plate but would improve the colour of the image. If the plate were left in it for too long, the image would be too much reduced and the tone too cold.

Exhibitions.

SOCIETY.	ENTRIES CLOSE.	OPENS.	CLOSES.	ADDRESS OF SECRETARY.
Camera Club	—	Oct. 17	Dec. 8	G. Davison, The Camera Club, Charing Cross Road, W.C.
Cornish Camera Club ..	—	Dec. 5	Dec. 10	H. Tonkin, 22, Market Place, Penzance.
Phot. Soc. India	—	Dec.	—	Calcutta.
Phot. Soc., Ireland	—	Dec. 9	—	J. H. Hargrave, B.A., etc., 3, Newtownsmith, Kingstown, Dublin.
		1893.		
West London	—	Jan. 10	—	Lionel C. Bennett, 30, Blandford Road, Bedford Park, W.
Louth	—	Jan. 26	—	S. Francis Clarke, L.D.S., 8, Upgate, Louth.
Holborn	—	Feb. 18	Feb. 20	F. J. Cobb, 3, Albion Grove, Barnsbury, N.
Fillebrook Atheneum ..	Feb. 21	Mar. 1	Mar 2	J. W. Spurgeon, 1, Drayton Villas, Leytonstone.
Philadelphia (U.S A.) Phot Society	Mar. 15	April 17	April 29	Robt. S. Redfield, chairman, Exhibition Com., 1,601, Callowhill St., Philadelphia, U.S.A.

TUNBRIDGE WELLS AMATEUR PHOTOGRAPHIC ASSOCIATION.

THE sixth annual exhibition is over, and it is more than likely that it will long be remembered in Tunbridge photographic circles, and it may bring the subject of exhibitions and awards prominently to the front. The judges were Col. Gale, and Messrs. Geo. Davison and Wm. Mayland, who, in making the awards, say that, having given careful consideration to the exhibits in the exhibition, their decisions are as follows:—

In the following classes, whilst withholding all awards of medals on the ground of insufficient merit, they are pleased to mention the following as the best, in their opinion, in each class:—Class I.: (No. 13) "Entrance, Great Mosque," E. R. Ashton. Class II.: No award or mention. Class III.: (41) "Breakers," Geo. Lewis. Class IV.: No award or mention. Class V., Lantern slides: No award or mention. Class VI., Transparencies: No award or mention. Class VII., Scientific: No award or mention. Class VIII.: No award or mention. Class IX.: Nos. 224 to 227, four slides, A. Cornell. Class X.: (358) "Waiting for the Boats," F. G. Smart. Class XI.: (314) "Shade," W. B. Cassingham. Class XV.: No award or mention. Class XVI.: (578) "Washing Day, Normandy," R. W. Robinson. In the remaining classes the awards are as follows:—Class XII.: (345) "The Grey Dawn," silver medal, B. Alfieri; (399) "Fenland," silver medal, A. Horsley Hinton; (372) "The Peasmarsh after Sunset," honourable mention, T. M. Brownrigg. Class XIII., Genre: (418) "Aha!" silver medal, Mr. S. F. Clarke; (412) "All's Fair in Love or War," bronze medal, A. G. Tagliaferro; (414) "Worn Out," honourable mention, J. E. Austin. Class XIV., Lantern slides: Nos. 499-504, silver medal, T. M. Brownrigg; 463-468, silver medal, E. G. Lee. Class XVII. Genre: (607) "A New Pet," silver medal, R. W. Robinson; (591-595) "The Naver Ceremony," honourable mention, S. N. Bhedwar. Class XVIII.: Nos. 664a-669a, bronze medal, Geo. A. Thompson. Class XIX. Portraits: (690) "Sir F. Leighton," silver medal, R. W. Robinson. Class XX., Enlargements: (735) "Kew Gardens," silver medal, F. Seyton Scott. Apparatus: No award.

The judges wish it to be understood that they have fixed a high standard of excellence, and have applied it throughout all the classes and awards.

The judges have been very chary in making their awards, a course of proceedings by no means to be deprecated when not carried too far.

In Class I. (architecture, exterior or interior) Mr. A. W. Pierson's "Portcullis, Bodiam Castle" (5) strikes one as being very good, and Mr. E. R. Ashton, who sends a most interesting collection of Algerian views (10-15), gains honorary mention for "Entrance to Great Mosque" (13), in each case the native figures being most artis-

tically grouped. Passing to Class II. (for interiors), some interesting views of the drawing-room at Broom Hill (35) and Sir David Salomon's workshop come from Mr. J. D. Morgan, whilst Messrs. H. T. Wood, E. R. Ashton, and W. B. Cassingham again figure creditably. By far the largest class is No. III. (landscape and seascape), for it is here where the talent of the amateur is always most visible; 44-48 are excellent seascapes, and Mr. G. Lewis secures honorary mention for the first. Mr. H. T. Wood's dozen (49-62) are all of them very pretty little scenes. Mr. Horace Booty's exhibits (80-85) prove him to be a welcome addition to the Association, and his contributions include some very effective views. In 112 and 113 Mr. J. Chamberlain, the energetic secretary, has two good specimens of pictures taken with a pinhole instead of a lens. Class IV.: Messrs. J. Chamberlain, W. E. Brampton, and E. R. Ashton send specimens of genre. In the case of the latter, No. 128, "An Arab Household," is really one of the best pictures in the room. It has been awarded one of our Bronze Medals, and the figures are posed with great skill, and the scene is exceedingly natural "A Consultation" (No. 126) is a capital example of artistic work. The lantern-slides and transparencies, and stereoscopic (132-183) make very fair classes, for which Messrs. Pierson, Cornell, Morgan, and Cassingham are responsible. Coming to Class VII. (scientific or any subject not included in the above), it is perhaps well that this class does include any subject other than scientific, for we cannot find anything that especially calls our attention in a scientific sense. It contains, however, some good flower studies by Mr. Morgan, but the other entries are of no great importance; and Class VIII. includes some admirable specimens of the work from the President, Mr. F. G. Smart, Messrs. Wood, Cornell, Morgan, and Cassingham, the latter two of whom, together with Messrs. Cornell and G. Brittain, being the contributors in Class IX. for lantern slides from negatives taken with the hand-camera.

Classes X. and XI. were open to members of any photographic society in Kent or Sussex, and were very fair. In the former (figure studies) the President forwarded some very good pictures taken at Hastings (256-258). Messrs. P. Darm, W. S. Putland, and A. R. Dresser are the fresh names to be found in Class XI. Mr. C. A. Timmins, in Class XII., landscape or seascape, has two good cloud effects (336 and 338), but they are printed so dark as to look like moonlight. Mr. B. Alfieri secures a silver medal with "The Grey Dawn" (345), and his "Against the Sky" (346), like 345 and 347, is an example of the new school, in which definition subordinates pictorial effect; whilst the grouping is very good. Mr. Brownrigg has some fine atmospheric effects in 372-6, but one sadly feels the want of figures in some of these pictures. Mr. A. Horsley Hinton contributes four exhibits, gaining with "Fenland," 399, a silver medal. "Winter's Requiem" (396) is very good, but surely, Mr. Hinton, the sky is too dark, and ought to reflect in the water. "Lowland Solitudes" is a large specimen of Mr. Hinton's excellent work. Passing on to the Genre class, a silver medal is awarded in this class to Mrs. F. Clarke for a capital little item, suggestively entitled "Aha!" (418), and Mr. A. G. Tagliaferro, for his "All's Fair in Love or War" (412), carries off the bronze medal. "Pastorale" (428), from the silver medallist, appears to be a good example of combination printing, and is very poetic in treatment. A good specimen of the pun-title is afforded by Mr. C. Court Cole in 429 "The Cobbler with his First and Last." Silver medals go to Messrs. E. G. Lee and T. M. Brownrigg, in Class XIV., for lantern slides. In the Landscape or Seascape Class, "A Stiff Breeze" (571), by H. W. Bennett, is exceedingly good. Mr. R. W. Robinson comes again to the front with some very fine work. Very interesting and very original are some of the studies, in which the grouping is very effective, particularly "A Mussel Gatherer" (579).

The open class of Genre is certainly the most interesting and important, thanks to Mr. S. M. Bhedwar, of Bombay, who secures "honorary mention." It contains his now famous "Naver" pictures. R. W. Robinson, who is awarded a silver medal for "A New Pet" (607), and whose series of pictures (607 to 617), many of them dealing with life in Brittany, have been famous in many of the recent exhibitions. Mr. G. E. Thompson is the recipient of a bronze medal in Class 18 for lantern slides, and in the next section Mr. W. J. Byrne, Mr. S. Bhedwar, and H. Yeo have some good studies, and a silver medal for a fine portrait of Sir Frederick Leighton goes to Mr. R. W. Robinson, who is here again very successful. In the enlargements (Class 20), Mr. F. S. Scott, with a platinotype, "Kew Gardens" (735), wins the silver medal. To deal with the not for competition exhibits, we fancy we recognise in 772, "The Weir Pool," by Mr. H. P. Robinson, the artist himself sitting at the side of the waterfall, and in looking at the picture just note the excellent effect of the smoke in the distance. The Rev. W. F. Scott, Messrs. Elliott and Sons, H. Sandland, and A. Cornell also exhibit in this class; an interesting series of views are lent by Colonel Dawes.

Apparatus was exhibited by Messrs. Watson and Son, Smith and Son, James Doré, the Blackfriars Photographic and Sensitising Company, Taylor, Taylor, and Hobson, T. H. Powell, J. R. Gotz, Dunkley and Rogers, the Paget Prize Plate Company, Henry Park, Whitrow, Cassingham, Morgan and Penn.

EXETER AMATEUR PHOTOGRAPHIC SOCIETY.

At the Art Gallery of the Exeter Museum the annual exhibition was opened on 24th ult. It was on a much more pretentious scale than last year—which was practically a private exhibition.

The Exeter society are to be commended for having divided their competitions into two parts, namely, for members only and open classes. In the latter division contestants may be amateurs or professionals. To an outsider it might seem unfair to pitt amateurs against professionals, but experience has proved the reverse. This was now again made manifest on Thursday by the amateurs carrying off the majority of the awards. There were 455 pictures hung on the walls, and of these 362 were for competition. Contributions were sent in from all parts of the United Kingdom, whilst Italy and Philadelphia were also represented. Members' classes comprised general photos, portraits, lantern slides, and enlargements, the several processes including platinotype, bromide, carbon, and others. The rest of the sections are open, beautiful examples being exhibited. Two large carbon enlargements of Hawarden Castle and Chester Cathedral attract a good deal of attention, and among the exhibits not for competition are an enlargement of the Alhambra Palace, the interior of St. Puolo, Rome, a bird's-eye view of Oxford, and a splendid photograph of Exeter Guildhall by Mr. Long.

The officials of the society are as follows:—President, Dr. J. Cheese; Vice-President, Mr. W. P. Wall; Hon. Secretary, the Rev. J. Sparshatt; Hon. Treasurer, Mr. J. Hinton Lake. Committee—Messrs. Holden, Dudley, Berrie, Cole, Lloyd-Jones, Batt, Huggins, Melhuish, Colonel Hutchinson, and Colonel Dowdall. Following are the awards:—

General (members only)—Silver medal, E. Dudley, subject, "The Chapel at Haddon Hall;" bronze medal, "A Somersetshire Peep," by A. Norman. Portraits and figures (members only)—Silver medal, "Family Cares," the Rev. J. Sparshatt; bronze medal, "Moorish Male Figure Study," Colonel Hutchinson; honourable mention, "Playing with our Dolls," the Rev. J. Sparshatt. Enlargements (members only)—Bronze medal, "Looking Down the Exe from the Bonhay," Miss K. E. Truscott. Lantern-slides (open)—Equal for bronze medal, C. Cole and F. W. Huggins (various subjects); honourable mention, F. W. Huggins, "Microscopic." General (open)—Silver medal, A. Horsley Hinton, "Salt Marshes, Essex," "October," "The Evening Ebb;" bronze medal, C. C. Cole, architectural studies; honourable mention, W. C. Hemmons, "Boats in Harbour," "Old Hulk." Portraits and figures—Open—Silver medal and honourable mention, F. E. Austin, "Chaff" and "Worn Out;" bronze medal, R. H. Lord, "How's That?" Enlargements (open)—Bronze medals, A. Drysdale, "On the Couquet;" and Woodbury Company, "Punchinello." Lantern-slide—Open—Silver medal, J. E. Austin, various subjects; bronze medal, E. G. Lee, ditto; honourable mention, A. Pringle and Mrs. Traverner. Other prizes were given by the President, the Hon. Secretary (the Rev. J. Sparshatt), Colonel Hutchinson, and Colonel Dowdall. In a competition for a photograph illustrative of the poem "Dora," Miss Sherley Surridge was successful; for survey prints Miss Truscott and Mr. E. Dudley took first and second respectively, and Mr. Cole won the honours for pictures illustrative of holiday rambles.

Mr. Walter D. Welford was the judge.

SOUTH LONDON PHOTOGRAPHIC SOCIETY.

This exhibition was opened on 24th ult., and closed on 26th ult., and we regret that we cannot congratulate the Society either on the exhibition or the hanging of the frames. The judges, Messrs. Cembrano, Horsley Hinton, and Andrew Pringle, made the following awards:—

Class A, silver medal for the best general exhibit: Nos 482 to 513, and A 52 to 54, Mr. C. H. Oakden. Class B, silver medal for the best picture exhibited, irrespective of size: No. 242, Mr. Thos. H. Powell. Class C, silver medal for the best set of six lantern slides: No. A 41, Mr. W. Rice—bronze medal for the second best set of six lantern slides: No. A 2, Mr. H. Esler. Class D, silver medal for the best series of six views taken within a radius of five miles from Hanover Hall, south of Thames: Withheld. Class E, silver medal, portraiture, best set of six: Withheld. Class F, bronze medal for the best picture taken on any of the Society's excursions, irrespective of size: No. 179, Mr. Wm. Howell.

Classes open for the members of the South Metropolitan photographic societies:—Class G, silver medal for the best picture shown, irrespective of size: No. 486, Mr. C. H. Oakden; bronze medal for second best ditto: No. 110, Mr. H. Kirby. Class H. silver medal for best set of six lantern slides: No. A 62, Mr. F. Goldby, of Brixton and Clapham Camera Club; bronze medal for the second best ditto: No. A 51, Mr. C. H. Oakden.

On Friday evening, at the time of our visit, the room was fairly

full, and it was utterly impossible without going on one's hands and knees to see many of the frames, as they were actually some of them touching the ground. The silver medal in Class B was awarded to 242, "A Rising Chemist," by Mr. T. H. Powell—we presume for the somewhat punning title, otherwise we cannot understand it, for it is certainly not a perfect print or perfect picture.

The first we notice are some small landscapes by W. Dishman, several of which if printed in more suitable process and with greater care might be really nice subjects. Of these, "Morning," "A Frog's Paradise," and a "Windy Corner" are the best, the last-named being spoilt by a careless joining of clouds and landscape. J. W. Slater shows some good plain silver printing of the usual commercial type. Amongst a number of works by Howard Esler, we should select the two Canterbury subjects as very good. The remainder of this exhibitor's contributions are no doubt technically good, but are wanting in taste and feeling. Very well worth notice are the landscapes by N. Harman, "The Rookery, Dorking," and "Mill at Beddgelert," being amongst quite the best landscapes in the room. Wm. Howell shows a number of things of veryunequal merit; thus his landscapes, such as "On the Ravensbourne," which is very hard and appears to have been under-exposed. His Canterbury architectural studies are very fine, and must run the best very close.

We notice a frame of carefully produced snap-shots, but the ill-advised style of mounting seriously injures the effect. Thos. H. Powell sends a great variety of work. To "A Rising Chemist" is awarded a bronze medal. It is a small child portrait in very red colour. "Gee-up, mine Horsie" is another nice little piece of work of the same character, albeit many of Mr. Powell's photographs are very inferior to these, and it is difficult to understand an exhibitor lowering his average merit by contributing some that are seen here adjaeent. H. E. Farmer has some very satisfactory work to show. "With the Tide" is a nicely rendered seascape with sailing vessel. "Winter," too, narrowly misses being a eomplete success. The opportunity and material are there, but have not been fully utilised. "A Coming Storm" might have been a picture but for the three children in the immediate foreground. Some half a dozen little landscapes by G. Richardson are worthy of notice. They give evidence of nice appreciation of quiet river scenery nicely treated, but this is marred in one case at least by a frivolous arrangement of figures. Chas. H. Oakden has a great number of exhibits, and carries off silver medals for the best general exhibit and also for the best picture. His work is by no means of equal merit throughout, his architectural studies being by far the best, and it is for an interior of Ely Cathedral that he takes the first award. Other exhibitors whose work should be noticed are H. Sandland, J. T. French, E. A. Whitby, W. Rice, etc.

The apparatus section, or, as it is called in the catalogue, "the apparatus erection," included exhibits by Messrs. Adams, H. Crouch, Ld., Dollond and Co., Gill and Son, J. R. Gotz, Howell and Son, Percy Lund and Co., Mcody and Cattens, D. Noakes, H. Park, George Philip and Sons, T. H. Powell, W. F. Slater, W. H. Whittingham and Co., and A. N. Wormald and Co. During our stay in the hall a series of lantern slides were thrown on a screen, and we cannot congratulate the South London Society on the quality of the slides, some being actually bad.

NORTH MIDDLESEX PHOTOGRAPHIC SOCIETY.

THIS exhibition was opened on the 28th ult., and deserves special mention in that the society have been courageous enough to rely upon its members only for the pictures, and right well have they responded. The exhibition is certainly the best we have yet seen as representing purely members' work. Thirty-three members contribute over 180 pictures and twenty sets of lantern-slides. The judges, Messrs. J. Gale and Ralph Robinson, have awarded five certificates, although nine were placed at their disposal, and the others were withheld because they felt that they would have had to award at least a dozen extra.

Mr. Mummery is well to the front with some charming studies in low tones, particularly noticeable being No. 4, "A Light from his Pipe," and 19, "Low Tide in an Essex River," for which he gains a certificate. No. 7, by the Hon. Secretary, J. McIntosh, is good but a little too dark, a fault which is carried to the extreme in No. 7, by Mr. Mummery. No. 14, "The Long Day Closes," by J. MacIntosh, is a true evening lighting, though even this is heavy in the shadows; another of Mr. McIntosh's prints, No. 21, is soft and pleasing. No. 23, "A Professional Beauty," a series of successive dog attitudes, by R. H. Wynne, is worth looking into. In 29, by J. McIutosh, we have soft, low tones decidedly pleasing, and Mr. Marchant scores in 31, "Still Waters." No. 45 is hot in tone, and thus a good thing spoilt. No. 56, "Trout Inn, West Drayton," by E. Cherry, is a pleasant study, but has too many figures, and 62, by the same worker, is a capital interior. No. 66, "A Creek on the Thames," by C. Beadle, may well be noticed for its clever foreground. No. 80, "Towards Evening on the Yare," by A. J. Golding, is one of this worker's well-known shipping bits with far too much foreground, and 83, by the same, is a good figure study. No. 92, "Oulton Broad," by H. Smith, is clever and breezy. In 96 Mr. Golding misses a picture for want of a sky. No. 116, "The Lynher, North Hill," by W. Taylor, justly deserves the judges' award, it being a simple little study, but very soft and harmonious. No. 119 is a frame of four lake scenes by H. Walker, of rather hackneyed subjects but showing good technical work. No. 122, by A. J. Johnson, the two centre shots have fine skies, but the right-hand one is absolutely spoilt by the black masses of trees and over-printing. No. 132, "Footsore and Weary," by A. J. Hewson, is certainly expressive of the title, and in 138 Mr. F. Gaudon scores with a good enlargement by the energetic Hon. Secretary. No. 144, "A Much-Prized Picture," by H. Walker, is quite like Col. Gale's work in style, and takes a certificate. No. 145, "Marbles," by S. E. Wall, is spoilt by a curious blue stain over the whole picture, and 148, by the same worker, is a little heavy, especially in the sky, a fault again noticeable in 149. No. 153, "Going an Errand," by the same worker, takes a certificate, but is, we think, rather too black with a heavy sky. No 174, "Ouchan Valley," is a clever treatment of low country, and 175, by A. J. Johnson, a clever portrait of "Sir Fred. Leighton." No. 177 is a series of five prints by J. W. Marchant and J. McIntosh, especially valuable as a lesson of the value of re-halogenisation. No. 180, an enlargement by J. Hand, is also good and is free from those too prevailing faults, soot and white-wash. The lantern-slides, 193, by A. D. Golding, take a certificate, but are, we think, beaten by 203, by S. E. Wall. Too many of the slides are far too brilliant and black and white, and many spoilt by the want of suitable skies.

Societies' Notes.

THE amateurs of Oban, N.B., have banded together and formed a photographic society. Mr. Sam Lawrence, chemist, has been appointed interim Secretary.

A PHOTOGRAPHIC society has been formed at Marlborough. Mr H. H. Copnall, of 5, Barn Street, has been appointed Hon. Secretary

Societies' Meetings.

Aldenham Institute.—The usual fortnightly meeting was held on the 22nd ult., when the Chairman of the Club, Mr. W. Vere Mingard, gave "A Chat on Light," which proved very interesting. Having shown how difficult it is to properly define light, the lecturer showed the fallacies of Newton's "emission" theory, and then briefly pointed out the essentials of Huygen's "undulatory" theory. He showed the impossibility of light travelling in any but straight lines, and explained the principle of the "pinhole" camera. Having made it plain that light is a *sensation* and is itself invisible, Mr. Mingard dealt with the subject of refraction, afterwards combining it with dispersion. Newton's famous prism experiment, with the resultant spectrum, was described, and the solar spectrum analysed. Naturally special interest was evinced in the ultra-violet rays. A careful explanation of the theory of colour, and a comparison of colour in light to pitch in sound, brought a very enjoyable demonstration to a conclusion. In the conversation which followed, Mr. Allan Hair specially congratulated the lecturer on his fertility of illustration, by means of which he was enabled to simplify many parts of the subject ordinarily fraught with much difficulty. During the evening the Secretary distributed some sample lantern plates kindly presented by the Paget Prize Plate Company.

Bournemouth.—A meeting was held on the 22nd ult., when a demonstration of photography by flash light was given by Messrs. Miell & Ridley. A very interesting paper was read, dealing with the subject in a practical manner. After describing the source of light, and some of the various means employed to utilise it, pointing out the defects and drawbacks of the earlier methods, an improved lamp recently introduced for the purpose of photography by flash light was fully described, the mechanism being explained by means of a drawing. The contrivances used to diffuse and reflect the light were shown and explained. After the reading of the paper, four photographs were taken, including an instantaneous one of the President of the section (Rev. J. R. Husband, M.A.) and Dr. Roberts Thomson, also a group of seven of the members, all of which were very successful. Two of the negatives were developed in the presence of a number of the members in the large developing room ot the establishment. At the conclusion a hearty vote of thanks was passed to Messrs Miell & Ridley for their demonstration, which had clearly proved to those present that daylight is not

essential to the successful practice of the art of photography, and that the application of such artificial light will enable the photographer to ply his art under conditions and in circumstances never dreamt of fifty years ago.

Cardiff.—The seventh annual meeting was held on the 25th ult., the President, C. F. Gooch, Esq., J.P., in the chair. The report and statement of accounts were adopted as presented, and the officers for the ensuing year were elected. The retiring President was re-elected, and offered to repeat the prizes given during the past year. The Shuttle Hand Camera, sent by Messrs. Houghton and Sons for the inspection of the members, and the unique method of changing the plates, were much admired.

East London.—On the 22nd ult, ordinary meeting, Mr. G. S. Pasco (Pres.) in the chair. Mr. S. G Buchanan Wollaston, of the Platinotype Company, demonstrated the new cold-bath platinotype process, in a very able and explicit manner, before a crowded meeting. As a previous demonstration by Mr. Wollaston has already been fully reported, it is unnecessary to publish a repetition. The members were particularly struck by the ease in which a passable print could be obtained from an indifferent negative, by the judicious use of glycerine alone, and when mixed with the developer. A dozen prints from negatives of various contrasts were developed, showing how soft prints could be obtained from comparatively harsh negatives, the half tones in each case being beautifully rendered. A large number of mounted specimens were handed round for inspection, and were greatly admired.

Glasgow —The society met on the 18th ult. at 4 o'clock. The subject for the evening was a lantern exhibition by the secretary, Mr. William Weir. The subject the exhibitor chose was "Uses of the Hand Camera." He showed slides of the Clyde, steamers, animal studies, etc. The views were mostly taken with Shew's Hand Camera. The slides, which were much appreciated, showed that Mr. Weir knew how to make good use of his camera. The lantern was successfully worked by the chairman, Mr. M'Call.

Fairfield Camera Club.—The fortnightly meeting was held on 22nd ult., the Vice-President, Mr. H. J. Mallabar, in the chair. After the usual business, he gave a most interesting and instructive demonstration in the new cold-bath platinotype, treating the subject in his usual able manner. His magnificent specimens called forth universal commendation, and were ample proof of the capabilities of the process. The mode adopted of development locally by the aid of a brush and glycerine, was watched with much interest. The result was, as in the other cases, a fine print, and it almost seemed as if it were impossible to spoil a print.

Fillebrook.—November 21st, preliminary arrangements were made for the exhibition on March 1st and 2nd, 1893. Discussions followed on the subjects of (1) "Transparent markings on gelatine lantern plates after development" (which it was suggested might arise from imperfect mixing of the emulsion), and (2) "The new developer, Amidol." Mr. H. W. Bennett showed six negatives taken by him with a view of testing the relative capabilities of amidol and pyro. The subject was a light vase, and the plates and exposures were as follows: Nos. 1, 2, and 3, Ilford ordinary, exposure four minutes each; No. 4, a Mawson; No. 5, an Ilford special rapid; No. 6, an Ilford ordinary, the exposure for the last three being two minutes each. Nos. 1, 4, and 5, were developed with pyro and ammonia, proving, as was expected, somewhat under-exposed; No. 5, especially so, being very poor and stained from forced development. No. 2 was developed with pyro, potash, and soda, the result being similar to those preceding, but the development prolonged. No. 3, developed with amidol, mixed according to maker's directions, but diluted with three times its volume of water. and restrained with half a grain of brom. potassium to the ounce, was completely developed in two and a half minutes, and appeared as if considerably over-exposed. No. 6, with amidol developer, as per No. 3, was a negative full of detail and good gradation, though rather too thin; no stain or fog of any kind. In this case an Ilford ordinary developed with amidol proved decidedly faster than a special rapid developed with pyro. Mr. Bennett promised to make further experiments, particularly with the object of obtaining greater density with amidol; meanwhile it was his opinion that this developer was of great value for shutter work.

Hackney.—Ordinary meeting held on 22nd ult., Mr. J. Carpenter in the chair. The Hon. Secretary presented the society with several books, and a number of books were also added. Mr. Hudson also presented the society with a new arrangement for using gas from any tap with the lantern. Mr. Poulson showed some new kind of ordinary silver paper, which was glossy without having been burnished. It was not on the market at present. A demonstration was then given by the Autotype Company's representative. The lecturer proceeded to say that in 1839 it was discovered that paper with bichromate potash darkened by exposure to light, which discovery subsequently led to finding that sized paper darkened more rapidly, and that the darkened gelatine is insoluble, Mr. Swan patented a process with pigmented gelatine. The lecturer then gave a description of single and double process of transfer. The advantages, he said, were permanency and variety of colours. Ready-sensitised paper would keep from a fortnight to a month if kept dry. To save the trouble of double transfer a mirror at an angle of 45 degs. was used. Several exposure meters were handed round, enabling people to see how the exposure was determined upon. Demonstration was then given, showing the action, single and double transfer being shown. Various questions were asked incidentally by Messrs. Avent, Gosling, Barker, Beckett, and others, and the lecture was one full of interest. The ease of manipulating the paper was surprising, and its cheapness when compared with ordinary silver paper.

Leigh.—The ordinary fortnightly meeting was held on the 24th ult.; Mr. T. L Syms presided. Mr. T. Haddock gave a paper on "Plate-Making," recommending all amateurs to make their own plates. A discussion followed, in which Messrs. Burrows, Leigh, Syms, and Battersby took part. Mr. R. Leigh exhibited some beautiful bromide enlargements which were much admired.

Liverpool (A. P. A).—The monthly meeting was held on 24th ult., the President, Mr. Wm. Tomkinson, being in the chair. He referred in feeling terms to the loss the society had sustained in the death of Mr. J. Noakes, one of the well-known workers of large-sized pictures. The President next complimented the lady members upon the fact that one of their number, Mrs Marriott, had just succeeded in gaining one of the AMATEUR PHOTOGRAPHER Silver Medals. The Secretary read a short paper kindly contributed by Mr. Whitefield, of Manchester, upon his experiments with compressed gases for lantern purposes. The paper contained most useful information, which was highly appreciated by those present. Mr. J. Sirett Brown then gave a most interesting lecture entitled "A Glimpse of Rome in 1892," illustrated by upwards of 120 slides made from negatives taken by him in the spring of this year. The following is a synopsis of the lecture, which was certainly equal to any of the traditions of the society, and was followed with close attention, interrupted only by the bursts of applause which were frequently evoked by the excellent pictures.

Louth.—The AMATEUR PHOTOGRAPHER 1892 Prize Slides were exhibited in the Town Hall on the 24th ult., by Mr. E J. Wall, to an audience of between 300 and 400. It is needless to state that they were much admired, and the work of the two local celebrities, Mr. and Mrs. S. Francis Clarke, was very warmly received. An interval with vocal and instrumental music gave a brief rest to lecturer, lanternist, and audience.

North Surrey.—On 15th ult. Mr. Lewis Wolff read a paper on development (one of a series of lectures for beginners), in which he dealt only with the pyro-ammonia developer, as being the one mostly in use, and which he believes to be still unrivalled. After giving a description of the use of the developer, and explaining how, by varying their proportions, developers may be compounded to meet the requirements of varying exposures and subjects, he developed two plates, the first being a properly exposed one which yielded a good negative with a normal developer, the second a plate which had received exactly four times the exposure of the other, but by greatly increasing the pyro and developing very slowly, using no alkali at the start, an equally good result was obtained, and it showed no trace of its having received so liberal an exposure. To give the beginners present a distinct idea of the functions of the chemicals used, he compared pyro to a horse, bromide to the reins, and ammonia to the whip.

P.S.G.B.—Technical meeting on 22nd ult.—"Preparing Photographs for Exhibition." Mr. A. Cowan in the chair. Mr. W. Bedford deprecated the employment of peculiar frames which ruined the effect of adjacent photographs, but that photographers who adopted eccentric styles of framing should not feel hurt if their work was set apart or placed in less conspicuous situations. It might be advisable even to let it be understood at exhibitions that pictures in frames which might not harmonise with others would very possibly have to be hung in undesirable positions. The Chairman was in favour of the screen system, as at the Crystal Palace, but this could only be adopted in a properly lighted gallery. Mr. W. E. Debenham thought exhibitors should be left to the exercise of their own tastes; the only way he saw out of the difficulty being to draw a hard and fast line, saying within certain limits how the picture should be framed. The Chairman thought such a rule would be unfair. It might shut out a good work, as a particular picture might be the best sent in, and the plea raised by its producer that the other pictures did not harmonise with them. Mr. Debenham did not think that so much in judging depended on the mount as was often thought. Any of the members present were quite capable of judging a photograph on its own merits whatever the mounts might happen to be. They might think the mount was unsuitable, but their judgment of the print would not be materially affected. The Hon. Secretary asked whether the time had not arrived when all prints not actually permanent should be excluded from exhibition altogether. When one

saw prints fading even during the six weeks of an exhibition, he thought it was necessary to take some such course. Mr. Debenham would not exclude fleeting photographs from such exhibitions, but of course permanent collections were another thing. He thought the objections to stating methods and process were most unreasonable. Mr. A. Mackie thought that the exhibitor himself was the greatest sufferer when the pictures faded during a few weeks of exhibition. Mr. Bedford would not impose any unnecessary restrictions upon exhibitors, but thought that when a photograph was judged as a work of art, it was not well to inquire too closely as to the method by which it was produced, at least it should not be stated as a merit of the photograph that it had been produced by any special method; he would not exclude pictures if the details were not given. He thought the Society had done well hitherto in limiting information as to the process; that was certainly interesting, and he saw no objection to it, though others might. If there was any strong objection, he should say it would be well to relax even that condition. It had been said that there was a large increase in carbon prints at the recent exhibition, but from an analysis which he had made of the catalogue, that did not appear to be the case. Mr. Nievsky then demonstrated his apparatus for flash-light portraiture on ferrotype dry plates. The camera held forty plates, and could be charged and recharged in daylight. After exposure a movement of the camera dropped the plate into a developing tank. The developer, fixing bath, and water were contained in india-rubber bulbs, pressure upon which forced the contents into the tank. He proceeded to photograph some of the members present. Mr. Clifton always made a point of having as much light as possible from supplementary lamps, so that the flash when it came was comparatively unnoticed. Mr. J. A. Harrison exhibited a camera-stand attachment for enabling the camera to be tilted. It consisted of a double frame, the lower fixed to the tripod, and the upper carrying the camera, and was capable of being placed at any angle by means of a system of levers.

Pudsey.—AMATEUR PHOTOGRAPHER Slides were shown to a good and highly appreciative audience on the 22nd ult., and were very much admired indeed, being a distinct advance on previous year's slides.

Putney.—Ordinary meeting was held on 21st ult. Dr. W. J. Sheppard in the chair, when Mr. Kidd (of Messrs. Morgan and Kidd, of Richmond), gave a demonstration on "Bromide Enlargements." In a short preface Mr. Kidd said that bromide printing possessed advantages which practically made it indispensable to amateurs, especially during the winter, when every one engaged during the day must have found the extreme difficulty of obtaining prints by any process requiring our often absent friend, the sun. Here then was an easy way out of the trouble, for bromides could be worked comfortably at our own fire sides at night, with light and exposure entirely under control. As regards results, he passed round some prints, which certainly would have held their own with the best of any other process. Proceeding with the subject of the evening, he stated that the most suitable negative from which to enlarge was one that was soft and full of detail, but that he had purposely brought one which was a trifle hard, so that members might see how best to get over that difficulty. Having thrown from a $3\frac{1}{4}$ in. portrait negative to 23 by 17 enlargement on the screen, he explained the best method of obtaining a good vignette. In this case he made a pear-shaped hole, about 2 by $1\frac{1}{2}$ in., in the centre of a piece of thin cardboard, remarking that the mistake was often made of using a vignetting aperture far too large. Moving this backwards and forwards between the lens and the easel, he obtained a remarkably even and delicate vignette. When pinning up the paper the great advantage of using a yellow glass cap for the lens was clearly shown, as the image was plainly visible, and the operator could, therefore, see at the very last moment that it was properly thrown on to the paper. He strongly recommended the ferrous-oxalate developer, the stock solutions for which were made up in accordance with the following formulæ: — (1) Oxalate solution: Potash (neutral oxalate), 16 oz.; acid (citric), 1 d m.; hot water 50 oz. (2) Iron solution: Iron sulphate (pure), 15 oz.; acid (citric), 1 drm.; hot water, 30 oz.; (3) Bromide solution: Bromide of potassium, 1 oz.; water, 20 oz. For use, take 6 oz. of No. 1. and add 1 oz. of No. 2, and a few drops of No. 3, mix in the order given immediately before development. In his opinion this developer gave the purest blacks and whites, and consequently brilliant results. Only such a quantity of bromide of potassium should be used as might be absolutely necessary to bring the developer under control, as an excess would tend to produce greenish tones. The solutions must not be alkaline, and when mixing it is necessary to add the iron to the potash, otherwise a deposit will form and make the developer muddy. With an oxy-hydrogen light he gave an exposure of four seconds, and having prepared a developer of one iron to six of potash, he proceeded to develop, having first soaked the paper in clean water, and taken care that no air bubbles were on it. A glass bottomed dish was used, as density can better be judged by transmitted than by reflected light. The result was a print that was slightly chalked, and in order to show how this could be improved, he exposed the same negative for eight seconds, and made up a developer of one part of iron to twelve of oxalate, with bromide as before. The development was now, of course, slower, but the print was decidedly superior to the first, being more harmonious and pleasing. The prints without being washed were transferred from the developer direct into a dilute acid bath, made up of 1 oz. of acetic acid to 6 pints of water, where they were allowed to remain five minutes, and being then thoroughly washed in clean water, were placed in a ten per cent. hypo fixing bath for at least fifteeen minutes. To obtain the best results all operations should be carried through as expeditiously as possible, with clean hands, and in dishes which should be specially reserved for the process; development being completed before the hypo bath is even mixed. To get rid of the hypo, Mr. Kidd recommended that the prints should be taken out from the washing bath and occasionally squeegeed on the back; if this is done, two hours' immersion in running, and about five hours in several changes of still water will be sufficient. Mr. Kidd now proceeded to make an enlargement of a landscape, with a view to showing how to print in clouds. Throwing the image on the paper he screened the sky during exposure, taking care to avoid a hard line, by moving the shade gently up and down. After soaking, the paper was developed to about two-thirds of the desired density, he then washed the developer well out in clean water, replaced the print on the easel, and printed in the sky from a second negative, now screening the partially developed landscape. The paper being wet it was less sensitive, and the exposure was, therefore, proportionately lengthened. The development was then proceeded with until full density was obtained, local treatment being resorted to where necessary. The usual acid bath, washing, and fixing, of course, following. Mr. Kidd advised using the lens with as large a stop as was consistent with covering power, as small stops tend to produce flatness. If properly exposed, the image should be seen in about thirty seconds; the development should be proceeded with until the required density is nearly reached, when the developer should be poured off. It will be found that the print can then be better seen, and development stopped immediately by pouring on the acid solution. After making a few contact prints from negatives brought by members, Mr. Kidd exhibited some fine examples of collotype printing, showing results obtained by the firm's improved collotype method of producing machine-printed ink photographs. He gave an outline of the process, and explained its suitability for producing large numbers of photo-prints at a small cost for all kinds of artistic and commercial purposes. He stated that his firm had one of the largest and best equipped works in this country for carrying on this interesting process.

Sutton.—A meeting took place on the 1st inst., Mr. De Clifford being in the chair. There was a good attendance of members and visitors. Several sets of prints were forwarded for the summer competition, Mr. McCame and the Rev. J. Gale being requested to inspect and judge them at an early date, the result to be announced at the next meeting. A number of lantern slides lent by the Camera Club were afterwards exhibited. The next meeting takes place on Tuesday, December 6th.

West Kent.—Ordinary meeting on the 25th ult., the Vice-President, Mr. A. R. Dresser, in the chair. It was proposed and carried that the fortnightly meetings be held on Thursday instead of Friday. Mr. Hastings kindly placed a silver and bronze medal at the disposal of the judges for competition at annual exhibition January 12th, 1893. Mr. Gregor Grant read a paper on "Multiple-coated Plates, their history, use, and treatment" in which he followed the various experiments which led up to the invention of the Sandell Plate, and those which have been made to test it, showing specimens of the results of various exposures, and the action of the double film in rendering heavy contrasts of light and shade and preventing halation, also some showing the plate's great capacity for standing abnormal over-exposure. Mr. Grant held that for ordinary work where the correct exposure is known, and in cases of great contrast and for interior work where halation is to be feared, the Sandell plate shows great and invaluable superiority over all others, and carries out all that is claimed for it by its makers, viz., abolition of halation, capability of rendering great contrasts, and capacity for standing an almost indefinite exposure. Mr. Grant concluded his paper by touching on a modification of the Sandell plate for spectrum photography. The slides sent into a contemporary's monthly competition were shown, some being exceedingly good, especially those by Mr. Edgar Lee.

West London.—On 22nd ult., the President in the chair, a very pleasant evening was spent listening to Mr. J. C. Dollman's lecture on "Art and Photography."

The Photographic Society of Japan.—A regular meeting was held on the 7th ult., Mr. Edmond R. Holmes in the chair. The minutes of the last meeting were taken as read. The following gentlemen were proposed, seconded, and unanimously elected:—

Messrs. H. Baehr, F. Grosser, J. Schedel, and R. Mitomo. A set of pamphlets entitled:—"The Principles of a Photographic Lens simply Explained," by Messrs. R. and A. Beck, was distributed amongst the members, and a printing frame, of ingenious construction, by the same firm, was shown. This frame was of metal, except the back, and was of sueh construction that the whole of the print could be examined at once. A cordial letter was read from the Secretary of the Photo-Club, Orahais. The new "Concentric lens" of Messrs. Ross and Co. was shown by Mr. W. K. Burton, along with work done by it and by other wide-angle lenses of the same focal length. The new lens did not give absolute definition with the maximum aperture of *f*/16, but it gave exactly the same definition at the edge as at the centre of a fairly large sized plate. With an aperture of *f*/22 it gave absolute sharpness very nearly to the edge of a plate 22 by 12, the lens being twelve inches focus and a flat object at right angles to the axis of the lens being focussed. In fact, the field was truly flat, and this was the first lens of which such a statement could be made. A "Universal" lens by the same firm was also shown. This type was of the type of the "Rapid Symmetrical," but was twice as rapid. It was an outcome of the new Jena optical glass. Mr. K. Ogawa, as well as Mr. Burton, spoke of its high qualities as a portrait lens. The Foreign Secretary had been asked to report on a sample of Mr. J. B. Obernetter's plates. He had found them very rapid, although not quite up to the rapidity of the most sensitive plates in the market in Japan, and of exceptionally good quality. A very ingenious portable metal tripod stand, each leg going into a small tin box less than three inches long, was presented to the Society by Mr. R. Mitomo. A set of small prints on bromide paper were shown by Mr. K. Arito, and were much admired.

SOCIETIES' FIXTURES.

Dec. 1.—London and Provincial.—"Scenes from Ireland," Mr. F. W. Hindley.
" 1.—Leeds.—"Wanderings with a Hand-Camera in 1892," Mr. Godfrey Bingley.
" 1.—Wigan.—"The Carbon Process," Mr. J. H. Atherton.
" 1.—Camera Club.—"Odds and Ends," Mr. T. C. Hepworth.
" 1.—Northamptonshire Nat. Hist. Soc. (Photo. Sec.)—Comparison of Work.
" 2.—Lewisham.—"The Romance of the Stars," with illustrations, Professor Lambert, M.A.
" 2.—Cardiff.—"Lecturette," Mr. S. W. Allen.
" 2.—Holborn.—"The Optical Lantern," Mr. F. J. Cobb.
" 3.—Hull.—Amateur Photographer 1892 Prize Slides.
" 5.—Richmond.—Lantern Evening.
" 5.—Gloucestershire.—Demonstration of Eastman Novelties, Mr. Arthur C. Baldwin.
" 5.—South London.—"The Chemical Action of Intensification, with Experiments," Mr. Maurice Howell.
" 5.—Putney.—"Work with a Hand-Camera," Mr. A. R. Dresser.
" 5.—Leytonstone (Fillebrook Athenæum).—Conversational Meeting.
" 5.—Camera Club.—Smoking Concert.
" 6.—Aldenham Institute.—"The Human Eye as a Camera-Obscura," Lecture Continued, Mr. A. Hare.
" 6.—West London.—Technical Social Meeting.
" 6.—Hackney.—Members' Lantern Night.
" 6.—Staffordshire Potteries.—Enlarging Night
" 6.—North Surrey.—Col. J. Gale.
" 6.—Bolton.—"A Short Trip to Brussels," Illustrated, Mr. Wm. Collier.
" 6.—Oxford.—"Photogravure," Mr. A. Dawson.
" 6.—Louth.—"Bromide Printing by Contact," Mr. Clarence James.
" 6.—Birmingham.—"Hints on Improving the Quality of Negatives," Mr. E. C. Middleton.
" 7.—Eastbourne.—Members' Lantern Night.
" 7.—Liverpool (Y.M.C.A.)—"Reducing Negatives," Mr. S. Wright.
" 7.—The Photo. Club.—"Retouching," Mr. Redmond Barrett.
" 7.—York.—"Art in Photography," Mr. A. J. T. Ogden. Demonstration of Enlarging, Mr. J. Dickinson.
" 7.—Wakefield.—"Intensification."
" 8.—Blackheath.—"The Optical Lantern, and How to Use it," illustrated, Rev. W. H. K. Soames.
" 8.—Wigan.—Amateur Photographer 1892 Prize Slides.
" 8.—Hull.—Photographic Novelties.
" 8.—Leigh (Old Grammar School).—"Printing in Clouds," Mr. H. H. Wragg.
" 8.—Liverpool.—Annual Meeting.
" 8.—Blackheath.—"The Optical Lantern and How to Use It," Illustrated, Rev. W. H K. Soames, M.A.
Dec. 8.—London and Provincial.—Members' Open Night.
" 9.—Holborn.—"Lantern Slide Making by Wet Collodion Process," Mr. J. Stevens.
" 9.—Gloucestershire.—"Wild Animals in Captivity and Domesticated Animals," Illustrated, Gambier Bolton, F.Z.Soc.
" 9.—Glasgow (High School).—"Essay on Photography," Mr.
" Mr. R. Turnbull.
9.—Halifax.—"Bromide and Platinotype Printing," Mr. W. G. Thompson.

Reviews.

Virages et Fixages (Part II.) By P. Mercier. Published by Gauthier-Villars et Fils, 55, Quai des Grands-Augustins, Paris. Price 2fr. 75c.

This the second part of M. Mercier's excellent treatise on toning and fixing is fully up to the standard of the first. Platinum toning is treated of very completely and thoroughly, and new facts are brought to light. The other metals of the platinum group are also treated of, and the little-known papers which require no toning. A final theoretical and practical chapter on fixing concludes the book, which with Part I. forms the most reliable and complete treatise yet written on the subject.

La Photographie la Nuit. Traite Pratique des Operations Photographiques que l'on peut faire a la lumiere artificielle. By Marco Mendoza. Published by Gauthier-Villars et Fils, 55 Quai des Grands-Augustins, Paris.

Especially useful in the winter months, this little work treats of portraits and groups obtained by artificial light. Copying, reducing and enlarging, both with camera and lantern, are clearly and succinctly treated, and as the author has been careful to avoid loading his work with theoretical and unnecessary matter, it is practical and useful.

Les Tableaux de Projections Mouvementes. Etudes des Tableaux Mouvements, leur confection par les Methodes Photographiques, Montage des Mecanismes. By N. Fourtier. Published by Gauthier-Villars et Fils, 55, Quai des Grands-Augustins, Paris. Price 2fr. 25c.

This book forms a suitable context to the same author's work "La Pratique des Projections." It treats of the preparation of mechanical and lever slides of all kinds, chromatropes, etc., and to those of our readers desirous of making such slides we can heartily recommend the book.

Around the Roman Campagna. By G. E. Thompson. Published by E. Howell, Church Street, Liverpool, and Simpkin, Marshall and Co., Stationers' Hall Court, London. Price 4s.

Mr. Thompson has earned a well-deserved reputation as a lantern lecturer, nor is he a novice at literature; his previous work "Spring at the Italian Lakes," is well known. In the book before us the author leads us by easy stages round the Roman Campagna. Guide-books as a rule are very dry reading, yet Mr. Thompson has given what is essentially a guide-book which is not only extremely interesting but which is full of quaint quips and fancies. He was accompanied in his travels by his brother "the scientist," and the following note as to the meeting with the Curator of the marine aquarium at Naples is a fair sample of what the book bristles with:—

"The scientist had been to the marine station and aquarium situated in the public gardens of Naples. I believe that he and the Curator had rubbed noses together; at any rate, they had had much enjoyment in each other's society, for though they had never before met they had long known of each other by hearing of the ear; and, I believe, that the Curator had called some horrid beast after the scientist. I am not in it myself, and therefore I speak as a fool; but it does savour of drivelling idiocy when intellectual scientific men get wildly excited and nearly lose their mental balance if one of them finds in his tow-net a beast, half the size of nothing which has a tail, say eight-tenths in size—shorter than another beast about its own fighting weight. I know not if I have made myself clear, for I lack the scientific method of expression."

The book is well printed and bound, and is illustrated with six collotypes from the author's negatives. There is not a dull page from start to finish, and to the photographer or tourist about to visit Rome will be at once amusing and instructive.

Cassell's Family Magazine appears this month of the same high standard of literature as previously but much enlarged. We note that they are offering prizes of £5, £4, and £3 for the best single figure study, prints for which must be sent in not later than February 1st.

The Benevolent.—A meeting of the Committee of the Photographers' Benevolent Association was held on November 24th. Mr. A. Mackie in the chair. Four applications for relief were on the agenda. In the first case the applicant appeared. The Secretary had made him an advance of 8s. to meet immediate necessities, which was confirmed, and a further loan was made. Temporary work was found for the applicant until such time as he should find a situation. The second case was an application for a loan to buy furniture, and a loan of £5 was granted. The third case was adjourned through the applicant's failure to attend the meeting. The fourth case was an application for a loan of a camera and lens to enable applicant to do work for which he had received orders. The application was granted. The thanks of the Association were unanimously accorded to the Photographic Society of Great Britain and Fredk. Hollyer, Esq., for their generous contributions to the funds. The Secretary reported that an application for advice and legal assistance had been received in a case of illegal discharge. He had put the matter in the hands of Mr. Tabrum, who had promised to advise and to take such other steps as should seem necessary. Dr. Lindsay Johnson and Fredk. Hollyer, Esq., were elected Life Governors of the Benevolent Association, as some small acknowledgment of the assistance they had recently rendered to it.

Ely Cathedral.—Those who are interested in architectural photography will be well pleased at a few hours or even days spent at Ely, where one of our grandest cathedrals is. For the amateurs who do not know Ely these few lines are intended. The cathedral, which dates from 1083, has many historical interests and every style of architecture. There are many pretty bits to be obtained of the exterior; one or two I would mention. One taken from the college—if the reader is coming from the station, comes up Back Hill, and turns in the first arch on the right, and again immediately turns to the left; a hundred yards will bring you to the "Quiet Nook," which includes a portion of the Western Towers, and also some old gables, which makes a very pretty picture, and has been painted by an artist and termed "A Quiet Nook," which well deserves its name. Good views can also be had from the Park, River Ouse, Dean's garden, Bishop's garden, and the market place. Before entering the cathedral by the west door, I would ask you to pause and observe the Galilee Porch, which is a beautiful and exquisite specimen of Early English work. Entering this porch you will at once appreciate the grand view which meets the eye, the length of the nave (203 ft.), the noble appearance of the lofty arches, and the sublime grandeur of the whole. The ceiling, which is 200 ft. long and 200 ft. from floor, was partly painted by Mr. Henry Styleman le Strange, of Hunstanton, in 1858, but, owing to his illness, finished by his friend, Mr. T. Gambier Parry, in 1861. The central subjects are arranged in chronological order from the west, each being surrounded by a border and containing a legend. Walking down the nave and turning into the south aisle, when half way down you come to the Priors' Doorway, which is well worth a plate; it was formerly the Priors' entrance from the cloisters, but now opens into the Dean's private garden. You pass on to the elegant and magnificent octagon, which is one of the special glories of the cathedral; it would take too long for me to describe the grandeur here; and then again when we enter the choir there the visitor can expose any number of plates. The carving of the stalls is exquisite, illustrating sculptured groups in oak of the Old and New Testament; they were most of them executed by M. Abeloos, of Louvain. The reredos, though modern, is very beautiful, and was erected in 1858. There are also the north and south choir aisles, and the Lady Chapel, which is most interesting. In concluding, I would advise the visitor to look at photographs and purchase guide before going to cathedral, which can be seen and obtained at Morris's bazaar and luncheon rooms (established over forty years), where every information can be obtained about cathedral and surroundings, and permission to photograph can readily be obtained from the Canon in residence.—F. K. (a lover of the grand old cathedral).

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5886. **Burnham Beeches.**—Can any reader tell me how to get to Burnham Beeches, and how to spend a half-day there to the best purpose, photographically speaking?—GOBANG.

5887. **Ferrous Oxalate.**—I bought ferrous oxalate in two solutions (Eastman's)—No. 1, 20 oz.; No. 2, 6 oz. I wish to replace No. 2. Can anyone give me formula?—GOBANG.

5888. **Sink.**—Can any reader tell me how to make a cheap sink about 2 ft. by 1 ft. ?—GOBANG.

5889. **Negatives into Positives.**—Should be glad of any information as to the best method to adopt for converting old negatives into positives.—R. S. V. P.

5890. **Retouched Negatives.**—Will any reader kindly inform me where I can buy some negatives that have been retouched, as a guide to amateur?—W. K. B.

5891. **Removing Stains.**—Can anyone tell me how to remove pyro and ammonia developer stains out of a light coat sleeve, which I soaked in the developer accidentally, and did not discover till dry.—HON. SEC.

5892. **Lantern Slides by Reduction.**—I want to reduce some half-plates. I have a home-made apparatus very similar to that described in last week's AMATEUR PHOTOGRAPHER at p. 388. I therefore was glad to see this article, and resolved to get some ribbon; but looking on a little further, p. 396, I see Mr. Davis and Mr. Cembrano virtually say ribbon is useless, leaving out the chance of being smothered. Which version is correct? My objection to daylight is that I can't get any at this season of the year. I tried the other day with Thomas's plates, and with *f*/16 gave 7 minutes, but it was not enough, although the winter sun was shining that day, but since there has not been a chance. What should exposure have been? Personally I prefer the Alpha plates, and have in summer time got good results with a 25 or 30 minutes' exposure; now they would take a day per slide, and are useless for reduction.—H. P.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Oct. 28th.—No. 5849.
Nov. 4th.—Nos. 5852, 5854.
,, 18th.—No. 5866.
,, 25th.—Nos. 5875, 5878, 5880, 5881, 5884.

ANSWERS.

5850. **Altering a Group.**—This can only be done by carefully measuring on the negative the size of the head to be removed, then focus on the person it is desired to introduce, having a perfectly white background. Care must be exercised that this sitter is lighted in the same way as the original, and is of exactly the same size. Having exposed, developed, and fixed the negative, the original sitter should be carefully painted out with opaque or black varnish, and after the group has been printed in, the second negative adjusted so as to print in the second figure. It is an operation requiring considerable care, but is not impossible to do successfully.—EDITOR.

5851. **Neutralising Clearing Bath.**—It certainly is extremely easy and simple to neutralise the acid clearing bath. It may be effected by placing the print in a weak solution of ammonia, caustic soda, or potash, but whether it is wise is another question altogether, as, should all traces of iron not be removed, the same would immediately be precipitated.—EDITOR.

5856. **Toning Slides.**—There is no difficulty in toning slides with platinum. Any of the formulæ used for paper may be use, but unless the slide is very warm in tone no change will be apparent. Any intensifier applied to negatives may be used for lantern slides. Hodges' "Lantern Slide Manual" would give you every information on this subject.—EDITOR.

5857. **Toning Bath.**—Every bath used for toning may be kept. The precautions to prevent the deposition of gold are—(*a*) Use distilled water to make the bath; (*b*) Preserve from light before and after use; (*c*) Filter after using. But so much depends upon the constituents of the bath that no definite statements can be made.—EDITOR.

5859. **Platinotypes.**—Freshly-made chlorine water or a mixture of nitric and hydrochloric acids might do, but that the paper would suffer as well is almost certain. We have some experiments in progress, which we hope to publish shortly.—EDITOR.

5860. **Gelatine Lantern Slides.**—The best substitute for glass is undoubtedly celluloid, and England, of Charles Street, Notting Hill (see advertisement), and Fitch, Angell Road, Brixton, will supply both laotern and stereo celluloid films.—EDITOR.

5862. **Metal Plates.**—Probably these plates are lacquered; if so, the best thing to do would be to clean off all the old lacquer with strong hot soda solution, wash well, dry, and relacquer.—EDITOR.

5863. **Toning Trouble.**—The "disgusting" smell is due to carelessness on the operator's part, and points to acidity of the individual prints or toning bath. This may be avoided by washing the prints thoroughly before toning, by dipping into carbonate of soda, 1 to 20, before and after toning, neutralising both gold and fixing bath.—EDITOR.

5865. **Lead Toning.**—What advantages are expected from using lead and gold? In alkaline gold baths the addition of lead causes a precipitate of lead, and the tones are exactly the same as in a plain gold bath. In the neutral, or faint alkaline or acid baths, yellow oxide of lead is precipitated, which carries down some of the gold and weakens the bath. The action of lead in the combined bath was explained by Lainer in the AMATEUR PHOTOGRAPHER, July 8th, p. 12.—EDITOR.

5867. **Enlarging Apparatus.**—"Notes on Enlarging," which ran through the early issues of this year, will be of assistance, or Hodges' "Practical Enlarging."—EDITOR.

5868. **Alpha Paper.**—This paper requires from 30 to 120 seconds at 2 ft. from a Bray No 5 burner. It is developed with the ordinary ferrous oxalate developer. After development, and without washing, immerse in the following for two or three minutes:—

Alum	4 oz.
Citric acid	1 ,,
Warm water	80 ,,

Then well wash and tone in the combined bath or—

Warm water	20 oz.
Acetate of soda	60 gr.
Chloride of lime	4 ,,
Chloride of gold	2 ,,

Use as soon as cold. Try and obtain red prints first, as these tone best. Give rather long exposures, and use weak developer and plenty of bromide.—EDITOR.

5869. **Springs, etc.**—Try Percy Lund, Memorial Hall, Farringdon Street, or Fallowfield, 146, Charing Cross Road, W.C.—EDITOR.

5870. **Lantern Slides by Reduction.**—Distance between negative and lens, 25½ in.; between lens and lantern plate, 12¾ in.—PEN.

5872. **Diameter and Focal Length of Lens.**—There is no hard and fast rule for these, but unless it is required to include a wide angle, the focal length of the lens should not be less than the longest side of the plate used, *i.e.*, for 12 by 10 plate 12 in. focus. The diameter is purely a matter of what rapidity the lens is required, the most useful being one, the full working aperture of which is ⅛ the focal length.—PEN.

5873. **Composition for Graph.**—The following receipt is a very good one (the measurements are taken by weight):—Glycerine (pure), 6 parts; water, 4 parts; sugar, 1 part; barium sulphate, 2 parts. After mixing, let them soak for 24 hours, and then melt gently and pour into a pan.—HIRCUS.

5873. **Composition for Graph.**—A good chromograph mixture is the following:—

Water	4 oz.
Sulphate of baryta	2½ ,,
Sugar	1 ,,
Gelatine	1 ,,
Glycerine	6 ,,

Pour the above when warm into a zinc or other tray. When dry, prints may be taken in the usual way by writing with the aniline colour known as violet of methylaniline.—J. R. COOKE.

5874. **Printing-in Clouds.**—If enlarging by artificial light, make a print of the view and cut out as mask, expose the bromide paper for the view, cover with the mask, place a cloud negative in lantern, and expose again for the sky, moving a piece of cardboard to and fro over the edge of the mask to graduate the darkening. If daylight and dark-slides are used, I should print clouds in on a transparency by contact, and from that make an enlarged negative of the combined picture.—PEN.

5876. **Convex Glasses for Crystoleum Painting.**—S. and G. de Saulles and Co., Spencer Street, Birmingham; J. Griffin, Floodgate Street, Birmingham.—PEN.

5876. **Convex Glasses for Crystoleum Painting.** These glasses may be bought at 9d. a pair from Messrs. Lorraine and Forreston, 6, Middle Street, Hastings, but 7d. should be enclosed extra for box and postage, etc.—J. R. COOKE.

5877. **Photo Prints Suitable for Crystoleum Painting.**—These may be had from the same place as the glasses in answer No. 5876, but any ordinary photograph will do.—J. R. COOKE.

5879. **Enlarging Lantern.**—This will not give such good results when used for exhibition purposes, owing to the loss of light occasioned by using large condensers.—PEN.

5882. **Shutter.**—I should say Lancaster's "Sea-Saw" shutter, patent, price 10s. 6d. for quarter-plate, or 12s 6d. for half-plate, would suit your purpose, as it gives time and instantaneous without the use of a pneumatic arrangement.—J. R COOKE.

5883. **Enlarging.**—(1) From any text-book, such as "Dictionary of Photography" (Wall). (2) You could use two paraffin lamps, placing a sheet of ground-glass between them and the negative, and using reflectors; or focus with these and expose by magnesium ribbon.—PEN.

5885. **Flash-Light, etc.**—The best book is "Flash-Light Photography" (R. Slingsby), 4s.—PEN.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

D. W. F. M.—Letter by post.

FERROUS OXALATE.—We had a very complete article on warm tones on bromide paper in the AMATEUR PHOTOGRAPHER.

NOVICE.—(1) An under-exposed plate is usually a long time in the developer before any trace of the image is apparent, and when development is complete, the high lights are rather dense, but the shadows represented by almost bare glass. With over-exposure the image appears very quickly, and the whole plate is thin, and yet full of detail. (2) This query we do not understand. (3) Development by Lyonel Clark, price 1s, from our publishers.

H. HOLT.—Yes. Mezzotype not too hot in tone. No restrictions as to when negatives taken. We forget what your slides were now, so can give you no idea of how you stood.

GEO. T. USHER.—We may be able to find print, but we make a change this month, which will suit you.

W. A, R.—(1) You cannot do better than try Solio paper, with Mason's bath, by using which if the prints are properly washed permanent prints would be obtained.

S. S. WILTON.—We regret that your letter is inadmissible except as an advertisement.

C. V.—One part of washing soda, and two parts water will make a saturated solution.

TRIX.—Many thanks for notes on Ely. The last volume commenced with our issue for January 1st, and finished with that for June 24th. The present volume began July 1st and finishes December 30th.

CONSTANT READER.—(1) The rapidity of the plates you ask for is Ilford white label 25, medium isochromatic 30; Marion's ordinary, 35; isochromatics are the most suitable for snow and clouds. (2) Septatype from Sharp and Hitchmough, Dale Street, Liverpool, Sepia, platino ype and the carbon process are the only ones which can be absolutely relied on.

H. HEYWOOD.—All your prints are very badly over-toned, and certainly do not possess artistic merit, they are merely poor hand-camera shots. No. 5 is not straight. 2 has shifted in printing.

H. F. LINGING.—We will write to author, and then write you.

HON. SEC.—(1) There is no formula which can be absolutely relied on for sepia tones either with gold or platinum. (2) We are afraid the case is hopeless, but we insert as a query. (3) The loss of tone can hardly be avoided; try toning very deeply, but we are afraid you will not get over it.

ENQUIRER.—(1) Is there anything else you want? We give this up; you are almost as bad as the man who wanted his camera to do everything under the sun and a little more besides. Still, joking apart, Archer's ideal is the only one which comes anything near your requirements. (2) We will let you know about slides. (3) Your idea of prices is good, the lamp you mention is 15s. Many thanks for good wishes, always pleased to help you.

ALPHA.—We answer your query this week; if not full enough drop a post card, and we will write by letter.

J. H. GODDINO.—Many thanks for print, which however has hardly enough general interest to warrant us reproducing.

HIRCUS.—(1) Isochromatic, either Edwards' or Ilford. (2) The present volume began July 1st, and closes December 31st—all back numbers in print. (3) The cause of your stain is due to not washing plate enough, the stain will not matter, but try rubbing gently with handkerchief or soft linen dipped in spirit.

W. D.—The formula you want is—

Uranium nitrate	20 gr.
Potash ferridcyanide	20 ,,
Water	20 oz.
Glacial acetic acid	1 ,,

It is not proved yet that the prints are permanent. Probably they are.

H. J. WATTS.—All chloride papers contain free nitrate of silver, which soaks through on to the paper, hence the image on the back.

L. M. WALL.—Pleased to loan you slides, will book some to you, if you let us know the date you want them.

OKO.—The white deposit is due to some insoluble silver salt, probably sulphate, caused by your not using distilled water; filter it out as it is no good. Yes; good black tones may be obtained by the Kallitype process, and it is not a difficult process either.

J. N.—(1) Ten per cent. sol. of ferridcyanide. (2) The ordinary fixing-bath. (3) Soak your negative in water, then in hypo solution, add a few drops of ferridcyanide solution, adding more if not strong enough for local reduction add the ferrid solution in the proportion of 1 to 10 of hypo. (4) Yes; wash thoroughly after reducing. (5) The carbon process is not expensive and not difficult, and we hope to have a note on it shortly.

F. N. F.—You cannot use the ordinary printing frame. Get one of Cowan's opal printing frames from Marion's, or any dealer.

J. LINGARD.—(1) Use isochromatic plates, and the yellowness will not matter, and in a fair midday light the exposure should be about three minutes. (2) Yes, it would be possible to copy, using practically the same as for your print. (3) Probably a whole-plate W. A. lens would be of too long a focus for a half-plate, we should say that an ordinary M. A. half plate of 5 in. focus would suit you. We will try and get article on copying this month.

S. ALLPRESS.—The articles you want appeared in August 5th, 12th, 19th, and 26th issues, price 2d. each, and 2½d. postage.

W. R. P.—(1) No. Wood's, Cheapside, or Noakes', Greenwich, are the most likely people. (2) Your lens sounds like a French make, probably an early Chevalier or Darlot. We might tell more if we saw it. (3) It is a French lens no doubt. (4) The frilling is due to some peculiarity in the manufacture. (5) We always use cotton wool to polish with, the smear was probably damp. (6) The 12 by 10, if your camera will rack out enough. (7) No, we think not. (8) Tylar's or Upson's backs are both good. (9) We prefer artificial light entirely for lantern work. It is an advantage sometimes to take negatives the same size, but we much prefer to reduce from large negatives as it gives you a much better chance of artistic trimming down. (10) No, your solution would probably act all right. (11) When copying, use photomechanical or lantern plates with pyro developer. (12) There would be no difficulty in obtaining leave from the publishers of *Art Journal*, Warwick Lane, E.C. Many thanks for good wishes.

J. H. W.—Merely pin your photograph up on a flat surface, and set the camera up opposite it and then focus as large as required, and expose, using an ordinary dry plate.

M. WHITESIDE.—Yes, we shall be glad to lend you slides. We have three or four sets to loan. Will write you as to date.

J. F. M.—Your fault lies in allowing the prints to dry and the use of blotting paper. The prints after an alum bath must not be dried, and use writing paper, while squeegeeing—you cannot get pressure with blotting.

QUIZ.—(1) Silver printing is the usual thing, even in winter. (2) Alpha paper, see answer to query, No. 5868, in this issue. To tone this paper the prints must be of a red tone. (3) The toning by the bath you name is sulphuration, and is not likely to be permanent.

W. R. M.—We must see the prints before answering your question.

HY. E. SMITH.—The correct position of the stop is a matter for the optician to determine. Your best way is to cut a stop of about *f*/8 aperture, and slide it into the lens tube, and then find the correct position by pushing it backwards or forwards till you get the flattest field with the least distortion. If you like to send us the data as to focus and diameter of front lens, the distance between lenses, we may be able to tell you more.

BEGINNER.—Very pleased to see you any Monday between 2 and 5, or if this will not suit you, we will make a day appointment.

J. H. WESTERN.—You will find the formula for the intensifiers in Wall's "Dictionary of Photography," pp. 128 and 129—and almost any text-book if you cannot find them, we will repeat in full.

DOUBLE DROP.—Many thanks for letter which goes in.

BLUE GREEN.—About ten minutes stay in the uranium bath, and then on applying the ferric chloride the greeny blue tones are obtained.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques or Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.**, *or a commission of* **2½ per cent.**, *upon the sale price of the apparatus.*

Background – 8 ft. by 7 ft. cloth background with roller, cost 25s., take 12s. (subject, book shelf, etc.)—Fredk. Sharpe, Church Street, Oakham.

Two backgrounds, interior and scenic, flatted oils, 8 ft. by 8S in., new condition, price 12s. and 10s. 6d.; photographs, one stamp. — William Hare, Photographer, Sutton, Surrey.

Pair of backgrounds in flatted oils, good condition, 8 by 7, on linen and rollers, exterior and interior, 10s. each.—Drury, Wellington Street, Lincoln.

Cameras, etc.—Lancaster's 1892 special brass-bound Instantograph, See Saw shutter, three double slides, and tripod, cost 12Ss., price 84s.—Lyth, Westbourne Avenue, **Hull.**

Lancaster's quarter-plate Le Meretoire, three slides, complete, also Lancaster's Omnigraph, 27s. the two.—Quinton, High Street, Wimbledon.

Cameras, Lenses, etc.—5 by 4 portable camera, six double slides, 5 by 4 rapid landscape half-plate R.R. and canvas case, all by Perken, Son, and Rayment, in perfect condition, £7 the lot.—W. Street, Chase Road, Southgate, N.

Chadwick's hand-camera, six dark slides, Wray's 5 in. detective lens, bamboo stand, cost £7 7s., £3 10s. taken.—E. Ravenswood, Bromley Road, Beckenham.

Splendid 7 by 5 rapid rectilinear lens, good definition, *f*/8, only 17s. 6d. ; camera and few other things, list for stamp.—Cheltenham House, Stroud.

Will exchange Rayment's patent whole-plate camera and three double slides, good as new, for microscope by good maker, stereoscopic camera, or will sell ; can submit to Editor's inspection ; also Swift's whole-plate rapid Paragon lens with iris diaphragm.—No. 354, office of thie paper, 1, Creed Lane, E C.

Meagher's 9 by 7 portable camera, one single two double backs in leather case, and doublet lens by Ross, £5 10s.—E. Owen, Broad Street, Newtown.

Hand-Cameras, etc.—Griffith's magazine detective, holds 12 quarter-plates, pneumatic time and instantaneous shutter, single lens, finder, stops, etc., cost 31s., will sell for 21s.—E. Greenleaves, Priory Mansions, Bournemouth.

Lantern Apparatus.—Scott's warm air saturator for limelight, scarcely used, perfect order, £1.—Rev. F. Stow, Aysgarth, Yorks.

Lenses, etc.—Ross' medium-angle doublet lens, new condition, iris, for plates 10 by 8, splendid definition, £3 10s.—E. Owen, Broad Street, Newtown.

Pair accurately matched 5 in. focus single lenses, work *f*/8, by Sharp and Hitchmough, cost 33s., price 15s. 6d.—Feversham, 303, Wightman Road, Hornsey, London.

Half-plate R.R. lens, new, will take 21s., or exchange for landscape lens or 8 in. burnisher ; approval. —Thomson, 25, Merchant Street, Peterhead.

Negatives.—For sale, 20 half-plate negatives—Manx, Wales, Grange, Ingleton, Buxton, etc.—1s. each ; also 70 numbers "Photography."—1½, Nelson Street, Broughton, Manchester.

First-class negatives, specially selected as guides for amateurs, showing retouching, etc., result of 40 years' professional experience, 6 for 1s. 3d.—Richford, Wells, Norfolk.

Sets.—1892 quarter Instantograph, finest order, camera, lens, shutter, two slides, stand, and case, 50s. —J. Corbett, Knowle, Warwickshire.

Quarter-plate Lancaster's Instantograph, square pattern, four double slides, lens, and shutter, tripod, cloth, and case, complete price £2 2s.—E. S., 318, Old Street, E.C.

Good half and quarter plate camera for sale, with Wray's double extra 5 by 4 lens, covers both, two tripod stands, nine dishes, printing frames, and every accessory, £4, or separate ; approval on deposit with Publisher of AMATEUR PHOTOGRAPHER.—Photo, 62, Castlegate, Grantham.

Sundries.—AMATEUR PHOTOGRAPHER, first 13 vols., 8 vols. bound half calf with extra numbers ; "Quarterly," vol. 1, and numbers 6, 7, 9, 10 ; "Societies' Reporter," vols. 1 and 2 ; "Photographic News," 1884, bound ; "Magazine of Art," 1889, unbound. Offers to John Stabb, 154, Queen's Road, Bayswater.

Valuable bargain. Violin, beautiful harmonious tone, in fine preservation, suit lady or professional, very handsome model, excellent silver mounted bow, and first-class baize-lined case, accept 16s. 6d. the lot, also about 20s. worth of good music given in free ; absolutely certain to give satisfaction ; approval willingly ; references given. — Mrs. Graham, College Buildings, Ipswich.

E. P. half-plate camera stand, 5s. 6d. ; Godetone print washer, whole-plate, 4s. 6d.; ruby developing lamp, never used, burns colza oil, 2s.—Miss Godley, Killegar, Killeshandra, Ireland.

WANTED.

Cameras, etc.—Wanted, Lancaster's quarter-plate superior Omnigraph.—M., 7, Victoria Street, Barnsley.

Wanted, quarter-plate square camera, Underwood's Instanto or similar long-focus pattern, lowest price.—18, Braybrooke Road, Hastings.

Hand-Cameras, etc.—Wanted, hand-camera, must be good and cheap.—Golfer, Woodside, Crookham, Newbury.

Lantern Slides.—Wanted, sets of lantern slides in exchange for photographic sundries.—H. Bamford, Augusta Street, Rochdale.

Lenses, etc.—Wanted, whole-plate rapid rectilinear, all wide-angle, no rubbish, lowest price ; on approval ; deposit.—James Randles, New Mills.

Wanted, 5 by 4 rapid rectilinear lens, iris diaphragm, by good maker, cheap.—Pickthall, 15, Clarence Street, Runcorn.

Sets.—Wanted, good hand-camera or quarter-plate camera, lens, and tripod, exchange large 4-tune self-acting musical box, or sell 45s.—Frederick Sharpe, Church Street, Oakham.

Wanted, quarter-plate set, also hand-camera.—D., Woodside, Crookham, Newbury, Berks.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

Lanterns! Lanterns!! Lanterns!!! Slides! Slides!! Slides!!! The largest and most varied selection in the whole kingdom. Before selecting elsewhere, call and inspect the stock of the City Sale and Exchange, 54, Lime Street, Leadenhall Street, City, where we have no hesitation in saying you will find all that you require in this way. Lanterns for sale, lanterns lent on hire, lanterns sold on commission, or taken in exchange for other apparatus. Write for special supplemental lists, Manager, City Sale and Exchange, as above.

Bargains in Lenses.—Dallmeyer No. 2 B portrait lens, Waterhouse stops, rack focussing, grand definition, as new, £7 7s. ; whole-plate rapid rectilinear lenses, by Parker, Holborn, covers well to edges, Waterhouse stops, moveable hood, as new, 45s.; 9 by 7 Optimus rapid euryscope lens, grand definition, Waterhouse stops, as new, £5 5s. ; whole-plate rapid rectilinear by Charterhouse Stores, Waterhouse stops, best condition, 35s. ; 7 by 5 Laverne wide-angle rectilinear, grand definition, rotating stops, as new, take 22s. 6d ; Dallmeyer's 6 by 5 rapid rectilinear, grand definition, Waterhouse stops, moveable hood, as new, take £3 7s. 6d. ; half-plate Lancaster's rectigraph lens, thorough order, covers well, Waterhouse stops, take 32s. 6d. ; half-plate Lancaster Instantograph lenses, iris stops, and instantaneous shutter, 15s. ; half-plate Ross rapid symmetrical lens, as new, fine definition, Waterhouse stops, £3 17s. 6d. ; pair very fine Argus 5 by 4 rapid rectilinear lenses, accurately paired for stereoscopic work, fitted Waterhouse stops, moveable hood on front, and with camera diviceion, take 42s. ; Optimus quarter-plate portrait lens, rack focussing, Waterhouse stops, quite new, 21s. ; 5 by 4 Optimus rapid rectilinear, by Perken, Son, and Rayment, Waterhouse stops, 27s. 6d. ; Swift 5 by 4 wide-angle rectilinear, 5 in. focus, rotating stops, 32s. 6d. ; Dallmeyer portrait lens, c.d.v., grand definition, Waterhouse stops, finest order, 63s. ; Quarter-plate hand-camera lens, by Laverne, rapid rectilinear, adjustable focus, 15s., quite new. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy'e Medium). Every description of apparatus bought, sold, or taken in exchange.

Bargains in Hand Cameras.— No. 4 Kodak, as new, size 5 by 4, carries 100 films, fine rapid rectilinear lens, instantaneous shutter, in solid leather case, £7 7s. ; No. 3 Kodak, as new, size quarter-plate, carries 60 films, rapid rectilinear lens, instantaneous shutter, take £5 7s. 6d. ; Optimus Magazine, very finest order, Optimus rapid rectilinear lens, carries twelve quarter-plates, roller blind, shutter, focussing adjustment, £5 5s. ; Marion's Radial hand-camera, carries twelve quarter-plates, fitted rapid rectilinear, instantaneous shutter, two sunk finders, covered morocco, in case, £5 5s. ; 5 by 4 Swinden and Earp hand-camera, fitted Laverne rectilinear lenses, adjustable focus, carries twelve 5 by 4 plates, finder, roller shutter, etc., as new, £5 12s. 6d. ; Fallowfield's special Facile, covered morocco leather, especial rectilinear lens, iris stops, two finders, instantaneous shutter, carries twelve quarter-plates, as new, take £5 10s., cost £8 9s. 6d. ; Rouch hand camera, quarter-plate rapid rectilinear lens, roller behind shutter, bag changing, as new, £3 17s. 6d. ; Blair's 5 by 4 hand-camera, good lens, time and instantaneous shutter, two finders, rack focussing, three double dark-slides, as new, £3 3s. ; Kodak No. 1, best R.R. lens, carries 100 films, best order, in leather case, 40s. ; Fallowfield's Facile, fitted rapid rectilinear lens, carries twelve quarter-plates, as new, £3 17s. 6d. All above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Cameras and Sets.— 10 by 8 camera fitted all latest improvements, back and front extension, for wide-angle pictures, leather bellows, reversing back, rising and falling front, two double slides, grand condition, take £6 10s. lot ; Whole-plate camera, by Middlemiss, wide-angle movement, double extension, leather bellows, all latest improvements, three double dark-slides, book form, rapid rectilinear lens, Waterhouse stops, Taylor and Hobson finder, three-fold stand with turn-table top, and solid leather case, grand lot, £8 15s. ; whole-plate camera, by Walker, back and front extension, rising and falling front, double extension, leather bellows, three double slides, rapid rectilinear lens, Thornton-Pickard shutter, three-fold stand and case, finest condition, £8 8s. ; half-plate camera, by Percy Lund, back extension, conical leather bellows, three double slides, rapid rectilinear lens, shuttor, folding stand, and case, as new, take £4 10s. ; 5 by 4 best quality camera, by Robinson, Regent Street, leather bellows, rising, falling, and cross front, wide-angle movement, three double slides, fine rapid rectilinear lens, by Robinson ; Newman's shutter and Eastman's quarter-plate roll holder, All above guaranteed finest order. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Magic Lanterns and Slides. — Walter Tyler's Heliioscopic is perfection of all lanterns, supplied to Indian Government, School Boards, science classes, clergy, and exhibitors throughout the world. Impossible to have lanterns give better definition or more satisfactory results ; specially constructed lens, which no other lantern possesses.—Walter Tyler, 48, Waterloo Road, London.

Walter Tyler's Best Triples and Biunials are unsurpassed, and perfect in every detail. Good biunials, mahogany bodied, brass fronts, and all improvements, £7 10s. ; single lantern, with 4 in. condensers, portrait front lens, 4-wick lamp, complete, in case, 27s. 6d.—Walter Tyler, 48, Waterloo Road, London.

Lantern Lenses.—Specially constructed. Walter Tyler's new Helioscopic portrait combination lantern lens gives the most perfect definition and brilliancy, can be fitted to any lantern, and for excellence cannot be surpassed. No other maker has this lens, which is manufactured expressly for Walter Tyler, 48, Waterloo Road, Loudon.

Regulators and Gauges.—Great reduction, in price. Either can now be had of Walter Tyler for 14s. each. The largest stock of gas cylinders in England. Best seamless steel, tested and valved, and all eizes at very low prices.

Slides from Negatives and Pictures. —Walter Tyler manufactures and colours slides on the premises, thus ensuring speedy delivery, and prices are most moderate.—Walter Tyler, 48, Waterloo Road, London.

Biunial Lanterns.—If you are in want of a really good biunial lantern, perfect in every respect, call and see Walter Tyler's entire brass fronted, mahogany-bodied, lined with Russian iron, and fitted with new best quality lenses, and sold at a most moderate price. The top lantern will take a 4-wick lamp. These are great bargains.—Walter Tyler, 48, Waterloo Road, London.

Hire Department is now perfect. Largest and best collection of slides in the world ; over 200,000 always in stock. Temperance, travels, Scripture, educational, comic, tales, etc. Cheaper than any other house, no extra charge for coloured slides or effects. Special terms for large quantities.—Walter Tyler, 48, Waterloo Road, London

Lanterns and Slides.—If you wish to hire, purchase, or exchange, you cannot possibly do better than go to Walter Tyler, who makes this business a specialite, and you will thus save dealer's and all intermediate profits.—Walter Tyler, 48, Waterloo Road, London.

Second-hand Lanterns and Slides at very moderate prices, also all kinds of apparatus. Send for large catalogue, 120 pages, with instructions for working lanterns of all kinds, and costing an immense sum to produce, sent free for 6 stamps. Small catalogue and second-hand list, post free.—Walter Tyler, 48, WaterlooRoad, London.

Bijou Enlarging Lanterns.—Finest results with Hughes's patent rectangular condensers, half the size of ordinary make, superior definition, proper diffusion of light ; scientifically constructed, not commercial ; several whole and half-plate for sale, cheap.

The Marvellous Pamphengos. — Finest oil-lighted lantern, equals limelight, stood the test of over fourteen years against all imitations, elegant solid brass fronts, best lenses, from £2 10s. each.

Magic Lanterns, Magic Lanterns.— Largest assortment in the world, cheapest and best, nicely japanned lantern body, 4 in. double condensers, portrait front lenses, rack and pinion, four-wick lamp, in case, £1 7s. 6d.

The Docwra Triple Prize Medal, highest award, supplied to Dr. H. Grattan Guinness, Capt. C. Selwyn, Madame Adelina Patti, and the Royal Polytechnic, etc..

The Malden Triple; supplied to B. J. Malden, Esq. ; unparalleled results ; Capt. Chas. Reade, R.N

Fine Triple Lantern ; four set of large diameter lenses, £32, cost £60.

Special Triple; mahogany, brass fronts, £12 12s.

Elegant Mahogany Biunial ; brass fronts, £7 10s. ; blow-through safety jets, 11s. ; mix gas jet, 15s. 6d. ; Malden double dissolving tap, 15s. 6d. ; a number of grand effects ; particulars free, before purchasing. Send for Mr. Hughes's grandly illustrated catalogue, over 180 fine wood engravings, price 6d. ; postage 3d. ; separate list of 60,000 slides, price 6d. ; postage 3d. ; pamphlets free ; second-hand lists of bargains.—W. C. HUGHES, Brewster House, Mortimer Road, Kingsland, London, N. 50 coloured slides on loan for 3s.

CHRISTMAS CARD MOUNTS, gold blocked mottos, fancy bevelled edges, various samples ; 1s. and 2s., post free.—Hooper and Co., mount manufacturers, 5, Hand Court, Holborn, London. Price list of all kinds of mounts post free.

ENLARGING APPARATUS. — Hume'e enlarging apparatus, 5 in. condenser, without objective, 6ls.6d. ; with 8 in. condenser, 122s. 6d., carriage paid. —Hume, 1, West College Street, Edinburgh.

IMPORTANT TO AMATEURS.—Negatives skilfully Retouched. Printed in silver, gelatino-chloride, etc., and Enlarged. Also Developing, Copying, etc.—Terms strictly moderate.—Address, Wilfred Emery, 24, South Street, Baker Street, W.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 427. Vol. XVI.] FRIDAY, DECEMBER 9, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

Our Views.—Elliott and Son's Enlargements—The Deposit System—Our Efforts—A New Journal—Annual Dinner of Holborn Camera Club—Mr. Chang—Tunbridge Wells Exhibition—Societies' Reports—Slide-Making and Enlarging—Wheeler's Photographic Enlargements—Central Photo. Club—Exhibitions—Where we are Drifting—The Action of the Judges—Winter Work—The Monocle—Mr. Pringle on the Sandell Plate.

Leader.—Notes on Colour.

Letters.—Simple Changing System for Hand Cameras (Double Drop)—The Benevolent (Snowden Ward)—Exhibitions and Medals (Harvey George)—Lantern Slide Carrier (James)—Societies' Reports (Subscriber)—A Suggestion (Elliott and Son)—Watkins' Exposure Meter (Noverre)—The Speed of Plates (Imperial Dry Plate Co., Ld.)—A Correction (Grant)—Amusing the Orphans (Mitchell)—Lantern Slides of Life and Character (Welford)—Lantern Slides (Gordon)—South London Phot. Soc. (Young Member)—Medals and Lantern Slides (Salwey)—Medals at the Hackney Exhibition (Grant)—Tunbridge Wells Association (Chamberlain)—An Appeal (Gray).

Apparatus.—The Todd-Forret Lamp—Acid Fixing Salt—Cadett's Lightning Plates.

Reviews.—Photo-Mechanical Processes (Wilkinson)—Manuel de Chimie Photographique (Maumené).

Articles.—Concerning Mountants (MacLauria)—Photography as an Art (Nicholl)—The Reflector with the Projection Microscope—Notes on the Exposure for Moving Objects (Cotton-Jodrell)—Scientific Research in Photography (Reynolds).

Illustrated Supplement.

Societies' Notes.

Societies' Meetings—Aston—Birmingham—Burnley—Cardiff—City of London College—Croydon Camera—Croydon Micro—Darlington—Derby—Devon—Hackney—Guildford—Harlesden—Hereford—Holborn—Kensington—Leeds—Lewes—Leytonstone—Liverpool—Maidstone—Margate—Newcastle—Oxford—St. Bartholomew's—West Kent—West Surrey—Wigan—Woolwich.

EDITORIAL DEPARTMENT—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom	Six Months, 5s. 6d.	Twelve Months,	10s. 10d.
Postal Union	" " 6s. 6d.	" "	13s. 0d.
Out of Postal Union	" " 7s. 9d.	" "	15s. 3d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 43.—"Portraiture and Figure Study." Latest day, December 19th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, January 13th, 1893.)

Referring to our notice of the 24 by 18 carbon enlargements forming part of Elliott and Son's exhibit at the recent Stanley Show, we should like to draw attention to the fact that they were made from negatives taken in Houghton and Son's Shuttle Hand-camera by Mr. Birt Acres.

We have to again caution all our readers to strenuously adopt the "deposit system" in all dealings through our Sale and Exchange column. To all honest advertisers, whether buyer or seller, it is nothing but beneficial, whilst it is a great protection against unscrupulous advertisers.

We are now rapidly approaching the completion of our present volume and the commencement of Volume XVII. Our increased efforts to provide sufficiently varied reading for a very diversified *clientèle* seem to have been generally recognised, and our steadily increasing list of subscribers is evidence enough that our endeavours are appreciated. With success grows strength, and we are going one better. Some time ago our provincial contemporary announced its advent by saying that there is always room at the top. Still, it must be remembered that the topmost may always be outtopped, and there is no telling who in the end will be at the truck of the mast, and modesty prevents our suggesting.

Rumour has it that the case of one friend is hopeless, and its demise is inevitable, but its obsequies are likely to be attended by a newborn journal, which will come into existence under a very favourable horoscope. So some come and others go, but we, with your leave, good reader, go on for ever.

The annual dinner of the Holborn Camera Club, which took place last Saturday at Anderton's Hotel, on which occasion the President of the club took the chair, was pronounced a decided success, and proved a very enjoyable and festive evening. Capital after-dinner speeches were made by Mr. Fred Brocas, who proposed the health of the "Visitors," and Mr. Lowe, who evoked a great deal of merriment by his toast of "The Ladies." Mr. John Raphael rose to the occasion of responding to the latter toast in good style, and Mr. F. Cobb, the Hon. Sec., answered on behalf of the "Holborn Camera Club."

The familiar figure of Mr. Chang was seen busy in the earlier part of the evening with the flash-light. Altogether the annual dinner of this active club was quite in keeping

with the sociable character which has always been a feature of all its gatherings.

JUDGING from a perusal of last week's journals, one is irresistibly brought to the conclusion that the photographic press were not in attendance at Tunbridge Wells during the exhibition, but depended solely upon the Secretary's official report and the local papers. This is hardly to be wondered at when exhibitions are as numerous as they have been just of late, and almost suggests the possibility of a Photographic Central News Agency being formed, by which competent reports of provincial exhibitions might be provided for the various papers.

WE intimated last week that societies' meetings and exhibitions are always troublesome to deal with, and must be introduced at the expense of matter of more permanent and wide-spread interest. Probably all the photographic press will ere long recognise the necessity of reducing such items to a mere synoptical report. We are ourselves working in that direction, and believe our readers will not, in the end at least, disapprove.

IN addition to lantern-slide making the present season is essentially one for other branches of artificial light work, including enlarging. The recognition of the necessity for filling the upper half of a landscape print with something representative of nature's clouds or sky tones has been quicker in winning its way to recognition than it has when enlargements from landscape negatives are undertaken. This is partly, perhaps, because of the supposed difficulty of combining two negatives, and projecting them consecutively on the paper so as to join correctly and develop up in proper relative value.

WE would point out that the difficulty is not as great as might be imagined, and is certainly not insurmountable, and this being the case clouds in the landscape enlargement *must* be attempted unless we are satisfied with the most mediocre results. On this particular subject and many others equally important, Mr. George Wheeler, in his little book "Photographic Enlargements, and How to Make Them," gives some very useful hints, told in a clear, concise manner. It is a first-rate shillingsworth.

THE scheme for a new Central Photographic Club seems prospering, and appears likely to become an accomplished fact somewhere about the birth of the new year. The idea, by the way, has nothing whatever to do with the Photographic Institute or "Photographeries," proposed a long time back by Major Nott. This gentleman appears to have completely dropped out of the photographic world, and on his leaving this country his scheme seems to have died.

PHOTOGRAPHIC EXHIBITIONS are singularly unhappy in that they are too often followed by dissensions and disputes of a peculiarly unhappy nature. As will be seen from our correspondence column this week, the outlook is particularly stormy just now, and points to the urgent need for some effective and authoritative body of arbitrators or some universally recognised code of regulations, by the standard of which disagreements might be settled. It is greatly to be feared, however, that such an arrangement is not likely to be brought about, and a remedy in some other direction will have to be sought.

THE probability is we are gradually drifting towards the abolition of classes, and also the suppression of many disqualifying conditions. How soon the disappearance of medals altogether will follow, it were rash indeed to forecast, but to a considerable reduction in their number we may confidently look, in which case their value will be enhanced, and they will be the better worth trying for.

IT is not, perhaps, generally made clear as to whether a medal is awarded to the best in a given class, or for intrinsic and particular merit; the latter is surely the most rational course, only it involves the fixing a standard of excellence which may not meet with general approval. Whilst we cannot but heartily sympathise in the disappointment which our Tunbridge Wells friends are naturally feeling just now, and regret, though not necessarily wholly disapprove, the action of Messrs. Gale, Mayland, and Davison, their behaviour, after all, only differs in degree from what most other judges have done elsewhere. A similar trouble arose at Bedford last time, when the judges found it necessary to withhold several of the medals, to the great vexation of the society.

Societies are prone to be too generous in providing prizes —perhaps the chief blame lies there.

THE powers forbid that the disappointment felt should have a disastrous effect upon the future of the society at Tunbridge Wells. This society we have always looked upon as one of the most flourishing and deserving of encouragement. But surely its members live for some better aim than medal winning!

REPORTS of heavy snowfalls in various parts of the country reach us, and the presence of winter needs no demonstrating; one turns up the coat collar and thinks twice before taking up the camera-bag and sallying forth. Yet let us again remind our readers that the cold winds are worth braving for the pictures which winter landscapes will furnish, and probably early winter is a better time than the transition period between winter and spring.

LAST week we noticed Dollond and Co.'s "Monocle" lens, and since then have had excellent reports from the one or two workers who have had the instrument for trial. An absence of sharpness without actual fuzziness appear to be the first characteristic which will command the approval of artistic workers. We shall very shortly make further and more careful experiments with the "Monocle," and give our readers particulars of the result. It appears likely that this lens will satisfy the taste of many who cannot as yet reconcile themselves to the suppression of the lens altogether in favour of the "pin-hole," but to whom the rendering of the usual doublet lens has become distasteful.

ON the reading of Mr. Pringle's paper on "Multiple-Coated Plates," at the Camera Club last month, a highly interesting discussion ensued on the subject of halation, and the characteristics and uses of the "Sandell" plates referred to. Mr. Pringle somewhat qualifies his approval of the plates, and wishes it understood that it was not his intention to exploit these plates, but merely to open a discussion by giving the results of his experiments with them. Mr. Pringle said:—"I want you to understand that I do not think they are of any real value unless you give them enormous over-exposure. If you take them out and expose them sufficiently, you will get a result on the lower film, but I would not think of taking these plates into the field for any purpose unless I were sure to be faced with great halation, and even then I should think twice about taking them and giving such an exposure as would make life a misery. I am not an apologist for the plates.'

CAN we not have a National Photographic Union, which shall include all societies, and which shall, like the N. C. U. in cycling, settle some of these vexed questions, and also give some sort of recognition to those societies which will abide by their rules?

WE publish two appeals for help this week. Cannot some of our readers open their hearts at this festive season of the year, and help some of the poor children? We do all we can by loaning slides for charitable purposes free, and out of their abundance cannot our readers spare a little? We shall be very pleased to receive anything on account of the children.

WE would remind our readers that on the 31st inst. our annual "Holidays with the Camera" competition closes. The following are the

Rules and Conditions.

PRIZES.—Gold, Silver, and Bronze Medals, and Certificates, with special prizes of "Niepce" or progressive medals for past prize-winners.

SUBJECTS.—All photographs are eligible that have been taken during the "holidays," but must be landscape or sea pieces, with or without figures, views of towns, photographs of cathedrals, churches, public buildings, etc., but *not* portraiture, figure study, or pictures which could be classed as "Photography at Home." The prize pictures will become the property of the proprietors of THE AMATEUR PHOTOGRAPHER; other photographs will be returned if stamps be enclosed to cover postage.

NUMBER.—Not more than twelve or less than six prints are to be sent in. They must all be mounted and numbered to correspond with the numbers in the MS. They will be judged upon their merits as a whole.

DESCRIPTIVE NOTES.—Each competitor must contribute a short account of his holiday, to be not less than 500 or more than 1,000 words.

DATE.—All photographs must be received on or before the 31st December, 1892.

The photographs must be endorsed "Holidays with the Camera," and addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, Ludgate Hill, E.C.

NOTES ON COLOUR.

VI.—THE MIXTURE OF COLOURS.

(*Continued from p.* 379.)

WE must first of all distinguish between coloured light and coloured pigments, not only because the results are so different, but also because it has some considerable bearing on the results obtained in practical colour photography. And it is want of appreciation or recognition of this fact which will account for many of the conflicting statements made by various experimenters in this department of photography.

If we mix coloured light, we may state beforehand what the result will be. This is clearly shown in our last chapter, when treating of the three primary colour sensations. But this statement applies solely to pure-coloured lights, or lights obtained from the spectrum; in a less degree to stained glass, which is white glass stained with a pigmentary matter of some kind, and not at all to the admixture of solid pigments, whether dry or mixed with water or oil. A striking example of this kind is shown by the two following diagrams, fig. 6, *a* and *b*; *a* represents the light transmitted by a cobalt blue glass, and *b* represents the light reflected by the same glass ground to powder and mixed with water and spread on paper.

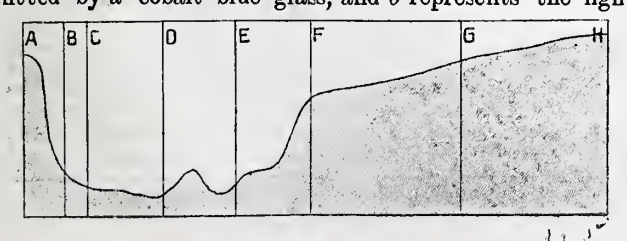


FIG. 6 *a*.

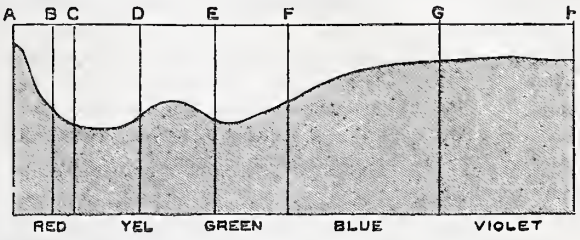


FIG. 6 *b*.

Let us first examine the result of mixing spectrum colours: we will take the spectrum colours from red to yellowish green.

Red and yellowish green give	Orange or yellow.*
Red and yellow give ..	Orange.
Orange and yellowish green give	Yellow.

Then taking our next primary colour, we come to rather a curious situation, viz., that green, when mixed with other colours, produces whitish shades. For instance—

Green and red, in varying proportions, give ..	Orange	Whitish.
	Yellow	,,
	Yellowish green	,,
Green and yellow give ..	Whitish yellowish green.	
,, cyan blue give	,, blueish green.	
Green and violet give ..	Whitish ultramarine blue.	
	,, cyan blue.	
	,, blueish green.	
Yellowish green and blueish green give ..	Very whitish green.	

Treating the violet end of the spectrum in the same way, we find—

Blueish green and ultramarine blue give ..	Cyan blue.
Blueish green and violet give	Cyan blue.
Violet and cyan blue give	Ultramarine blue.

We have now only to consider the results of mixing the two extremes of the spectrum, and here we find:

Red and ultramarine blue give	Whitish violet.
Red and cyan blue give ..	,, ultramarine.
Orange and violet give ..	,, red.
Red and violet give ..	,, purple.
Orange and ultramarine give	,, purple.

We have thus exhausted all but four combinations of spectral colours, and these do not give coloured but white light:

Red and green blue give	White.
Orange and cyan blue give	,,
Yellow and ultramarine give	,,
Greenish yellow and violet give ..	,,

These are so far all the principal mixtures of coloured lights with which we need concern ourselves, save one, and this exception is curious because it actually mixes lights though pigments are used, and also because in photographing such a subject we obtain a result totally different to that obtained visually. An artifice often adopted by artists who have a complete command over, and knowledge of, the power of colours, is that of alternating lines or dots of

* According to the proportion of separate constituents.

coloured pigments, the result being not the result of the mixture of these two pigments, but that obtained by mixing coloured lights as above described, when viewed at the proper distance. The author has lately come across a striking example of this, and the result to be obtained on an ordinary bromide dry plate. For purposes of testing certain dyed plates a coloured lithograph was used, in which a sky, illumined by a setting sun, was tinted a pale yellow, and in the foreground was a mass of yellowish-green foliage. To the eye these shades were even and perfectly graduated, the whole of the sky showing as one blended wave of deepening yellow; to the sensitive salt of silver, as shown by the resulting negative, this deepening tint looked like an innumerable number of minute black dots on a white background, and it was only when closely examined with a pocket microscope that it was seen that this yellow was formed of minute dots of cobalt blue and chrome yellow, regularly and evenly distributed over the whole surface of the paper. Ruskin, in his "Elements of Drawing," says: "Breaking one colour in small points through or over another is the most important of all processes in good modern oil and water-colour painting. In distant effects of a rich subject, wood or rippled water or broken clouds, much may be done by touches or crumbling dashes of rather dry colour, with other colours afterwards put cunningly into the interstices. And note, in filling up minute interstices of this kind, that, if you want the colour you fill them with to show brightly, it is better to put a rather positive point of it, with a little white left beside or around it, in the interstice, than to put a pale tint of the colour over the whole interstice. Yellow or orange will hardly show, if pale, in small spaces; but they show brightly in fine touches, however small, with white beside them."

This method—if we may so call it, this mosaic method—of mixing colours, often occurs in nature. The hue of a landscape is so modified in this way as to be charming to the eye, and it presents one harmonious uniform tint; whereas if this is photographed, the uniform tint is broken up into patchiness by the greater and different sensitiveness of the sensitive salt. Another method of mixing light adopted by nature is that of illuminating an object by two coloured lights. This is well seen in the case of a sunset, where objects are illuminated by the light from the sky and by the light of the setting sun. In a less degree we find this the case where coloured objects reflect their light on surrounding objects. When the object thus doubly lighted is white or grey, the above law holds good, but where the body itself is coloured a more complex problem is presented to us.

To enter fully into the different results obtained by mixing lights and pigments is almost beyond our scope, although an important subject. We shall, therefore, content ourselves with considering the fundamental difference between the two. Thus suppose we mix blue with yellow light, we obtain white, and we do so by sufficiently exciting the whole of the nerve fibrils by *adding* the effect of yellow to the effect of blue. Now let us consider the effect of adding a blue pigment, such as ultramarine, to a yellow pigment, such as chrome yellow. On intimately mixing these colours in the state of powder, the resultant colour will be a dull green, because this colour is composed of light reflected from the surface of the pigments and the light reflected from the interior of the pigments. Now, the light reflected from the surface is a dull yellowish grey, as it really is a mixture of impure blue and impure yellow, which mixture is, as it were, combined in our nerve fibrils; but, as we have already seen, the light entering the particles suffers absorption, and this light is also returned to the eye. Now, ultramarine absorbs the red orange and yellow rays, and the chrome yellow absorbs the blue and violet, therefore green is the only colour which is not absorbed, and this returned to the eye mixes with the surface colour, which we have seen to be a dull yellowish grey, and the resultant tint is dull green.

One very important point on the admixture of colours, which we must not omit to consider, is that of the effect of gas or lamplight on colours, because this is suggested as the most satisfactory method of copying oil paintings. Artificial light, such as gas or lamp light, is deficient in the blue and violet rays, and it has been proposed to increase this deficiency by using yellow glass or a deep yellow reflector.* The following are some results, given by Rood, † of experiments carried out on this subject.

Table of results obtained by illuminating colours by gaslight:—

Original Colour (by Daylight).	Results (by Gaslight).
Carmine	gave intense red.
Vermilion	,, fiery red.
Orange	,, brilliant orange.
Yellow	,, brilliant yellow tending to orange.
Yellow green	,, pure yellow.
Greenish yellow	,, pure yellow.
Full green	,, strong yellowish green.
Blue green	,, pale yellowish green.
Green blue	,, pale yellowish green.
Cyan blue	,, greenish yellow.
Blue	,, grey.
Ultramarine	,, violet.
Violet	,, strong red purple.
Purple	,, intense purple red.

This is an instructive table, which will well repay a little further notice, as we shall by this method obtain a somewhat clearer idea of what we require when carrying out practically our colour theories, and from a comparison with this table of any pigment in an oil or water colour we may arrive at a somewhat definite idea of the necessary rays of the spectrum for which we must work.

Letters to the Editor.

SIMPLE CHANGING SYSTEM FOR HAND-CAMERAS.

SIR,—Notwithstanding all the various methods adopted by the different makers of hand-cameras to effect the above object, a compact yet reliable and simple method, and one by which either plates or films or both, could be used, and that without the weight of metal sheaths or carriers, seems not yet to have been attained.

It occurs to me that by adopting the following modification of the systems in both the "Repeater" and "Frena" cameras the above objects could be effected in a very simple manner, and without the necessity of cutting the films, as required in the "Frena," viz.:—

That between each plate or film a thin, stiff card, about one-eighth of an inch higher than the plate, should be placed, with a notch cut out of each side about one-eighth of an inch from the top, so that top of notch or gap comes on a level with top of plate or film, a small catch at either side sliding up and down holds the film in position by its two top corners, and two small fixed catches hold it at the bottom. To change plate or film it would only be necessary to cause the two sliding catches to rise about one-eighth of an inch until the plate or film is released and falls forward into well at bottom; by again sliding the catches down to their original position the card at back would be released by reason of the gaps in it, and

* Abney, "Year Book of Photography, 1888," p. 33.
† Rood, "Modern Chromatics," p. 155.

PLATES THAT

"BEAT THE RECORD"

(British Trade Journal, Dec. 1892*).*

THE

IMPERIAL PLATES

"EXTREME RAPIDITY"

ARE THE FINEST AND THE QUICKEST IN THE WORLD

150 ON WATKINS' SCALE.

STOCKED BY ALL LEADING DEALERS.

Quarter Plates, 1/6 per dozen.

The IMPERIAL DRY PLATE CO., Ld., Cricklewood, London, N.W.

IMPORTANT ANNOUNCEMENT

In consequence of the enormous demand for the

"CADETT"

LIGHTNING PLATE

(RED LABEL),

We very much regret having to discontinue the manufacture of our **ORDINARY** Plate (Yellow Label) for a short period, in order to allow us to cope with the daily increasing orders for the **Lightning** and Lantern Plates.

The recent additions and alterations to our present Factory being insufficient to meet the demand for our goods, we are compelled to at once commence the erection of additional works. These new works will be fitted with Steam and Electric Machinery, embodying the latest improvements.

The Hurter and Driffield Speed Numbers of our latest deliveries are:

Axis.

130	105	120
Equal to Watkins'		
195	157	180

CADETT & NEALL, ASHTEAD, SURREY

CHIEF DEPÔTS.

London—W. WATSON & SONS, 313, High Holborn, W.C.
Aberdeen—G. W. WILSON & CO., 25, Crown St.
Bradford—PERCY LUND & CO., St. John Street.
Brighton—HARDCASTLE & CO., 71, East Street.
Burton-on-Trent—R. KEENE, 52, High Street.
Dundee—G. LOWDEN, 65, Reform Street.
Edinburgh—J. M. TURNBULL, 6, Rose Street.
Glasgow—G. MASON & CO., 180, Sauchiehall Street.
Hull—C. P. GIBSON, 16, Whitefriar Gate.
Jersey—J. RENOUF, Junr., 45, Don Street.
Leeds—REYNOLDS & BRANSON, 14, Commercial Street.
Liverpool—J. J. ATKINSON, 37, Manchester St.
Manchester—J. T. CHAPMAN, 7, Albert Square.
Newcastle—F. K. HURMAN & CO., 2, St. Nicholas Buildings.
Norwich—A. E. COE, 32, London Street.
Sheffield—J. PRESTON, 4, High Street.

OTHER TOWNS IN FUTURE ADVERTISEMENTS.

also fall forward into well over the plate; the catches at same time holding the next plate firmly in position. The usual spiral spring at back forces the plates forward as released.

A hand-camera could be made very cheaply on this principle, would be extremely compact, and if fitted with a good lens and shutter, and charged with films, would be all that could be required.

As regards cut films there can be little doubt that in a short time, when their advantages become better known, they will supersede glass altogether; the results being in every way equal, the manipulation as simple, and then there is added to this their lightness, freedom from breakage, and advantages of storage.—Yours, etc., DOUBLE DROP.

* * * *

THE BENEVOLENT.

SIR,—At the present time we have on the books of the Employment Bureau connected with the Benevolent, the names of many assistants for whom we see little probability of finding work this winter. We have one or two wet plate men who do well in the summer time, who are hard-working and economical, but who cannot tide over the whole of the winter. These, and some other men who are printers, would be glad to accept almost any situation in which they could earn a living. Some of them would take places as packers, light porters, etc. At present there seem to be very few vacancies for assistants, though we could find a first-class position for a thoroughly good wet-plate lantern slide maker. On the books we have a considerable variety of almost all classes of general assistants. In one or two cases of men for whom we have found outdoor employment, where we could not obtain them indoor work at their proper branches, the poor fellows are in need of good boots and weather-proof overcoats, which their reduced circumstances and small salaries in their temporary positions hardly enable them to purchase. If any of your readers have "cast offs" in these two lines, I should be glad to have a postcard offering them. I would rather not have the things sent on at once because, in some such cases, the contributions come to hand in greater quantities than the need requires; and it would be a pity for us to accumulate clothing which is needed for other charities.—Yours, etc.,

H. SNOWDEN WARD (Hon. Sec.).

Memorial Hall, E.C.

* * * *

EXHIBITIONS AND MEDALS.

SIR,—The letter from "Disgusted," in your issue of the 2nd inst., fully expresses the views of many who, like myself, have for years been sending work to various exhibitions.

There is no doubt that the time has arrived when some radical change will have to be made both in judging and classification of exhibits if the bulk of amateurs are to be expected to compete.

There can be no doubt that certain judges have their own fixed ideas of what should be the correct style, colour, and mounting of a photograph, and unless all these are complied with an exhibit stands no chance of recognition, no matter how good it may be from another judge's point of view.

The question of standard is another important one, and I think that the only solution is to have a champion class, in which the standard of excellence should be very high, and to which none but medallists should be admitted.

The ordinary class should be open only to those who have never taken a medal, and the classes might be further subdivided into "bronze medallists," "silver medallists," and "gold medallists." Imagine what a stimulus this would be to beginners, and how they would work for the honour of competing in a superior class. Each class would then show better work, and the "gold medallists" would naturally be those only who had attained the highest standard.

With regard to the judging, in my humble opinion it will never be satisfactory until the present system is entirely done away with, for I maintain that the best picture is the one which pleases the greatest number of people, and therefore the public who visit the exhibition should be the judges.

This arrangement could easily be carried out much in the same way that pictures are criticised and judged in circulating portfolios, where each member records his vote for the best, second best, and third picture in each class.

The picture obtaining the largest number of votes takes the prize, and in the event of a tie the matter could be got over by the casting vote of an expert appointed for that purpose. If each visitor to an exhibition be given a printed paper on which he can record his votes for first, second, and third in each class, and he deposit this paper as he leaves in a sealed box, I see no fear but that a perfectly fair and impartial judgment would be arrived at, and I greatly wish that some society would start an exhibition on these lines, as I feel sure it would be a great success.—Yours, etc., H. HARVEY-GEORGE.

The Tower, Gt. Yarmouth, Gorleston.

* * * *

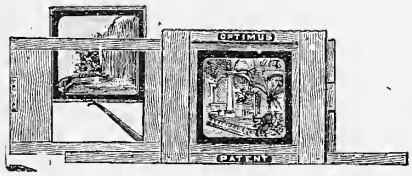
LANTERN-SLIDE CARRIER.

SIR,—In your issue of 23rd November last I notice you illustrate and give a short description of a lantern-slide carrier with an automatic slide raiser, manufactured by C. C. Vevers, of 12, Market Street, Briggate, Leeds. I have since carefully examined a sample of this carrier, and find that it is exactly the same in principle as those shown, described, and claimed in Patents No. 20,972, dated 23rd December, 1890, and No. 1,635, dated 27th January, 1892, of which I am part owner. In fact, it is identical with that shown in 1,635, 1892. I send you herewith the copies of the specifications, a sample lantern-slide carrier, and a block for your inspection. I find Mr. Vevers' application for letters patent was filed on October 13th, 1892, some time after the application of 1635, 1892, was completed, so there is no question as to priority of invention. The well-known firm of Messrs. Perken, Son, and Rayment have the sole right of manufacture of these carriers, and I feel sure, knowing your keen sense of right and justice, that you will do me the favour to publish this in your valuable and interesting paper, and thus correct any wrong impression that the article referred to may convey to any unwary members of the public who might be ignorant of the existence of the patents referred to in the commencement of this letter.

Thanking you in anticipation, I am, yours, etc.,

R. W. JAMES.

We have examined the patent specifications and carrier, which is shown in the accompanying block:—



Mr. James has the prior claim, we think.—EDITOR.

* * * *

A SUGGESTION.

SIR,—Your correspondent, Mr. W. Pitcairn Craig, has evidently misread your extract from the article which appeared in the November number of our paper, the *Photographer's Record*. If he will refer either to your extracts or the full account in our paper he will see that no mention whatever is made of *paper* semi-transparent masks; we simply mentioned a semi-transparent mask. The reason we did not indicate material is that we were making some experiments with stained gelatine and celluloid, and we hope in our next issue, which will be ready in about ten days, to give further particulars.—Yours faithfully,

ELLIOTT AND SON.

* * * *

SOCIETIES' REPORTS.

SIR,—As you invite your readers in this week's issue to express opinions as to your curtailing your reports of societies, etc., I beg to put in my word and say that I have observed with satisfaction what seems to me an improvement in this line. Your journal is a valuable hand-book on photography, and the more it is used as an educator in the art, and a record of its progress, the better.

When matters of general interest and instruction are brought forward at societies' meetings, by all means let us have them, but it annoys the general reader to even have to skip over the fact that Mr. So-and-so made a complimentary speech, or that such a society spent a social evening. Photography has advanced to the forefront in science and art throughout the world, and I am glad to see its useful helpmeet, THE AMATEUR PHOTOGRAPHER, keeping pace with progress.—I am, Sir, yours,

A SUBSCRIBER.

SOUTH LONDON PHOTOGRAPHIC SOCIETY.

SIR,—As a reader of your valuable paper, I have noticed your general remarks tend to help on photography, whether practised by individuals—amateur or professional, or societies and clubs—and, in the same spirit, as a comparatively recent recruit in the ranks of amateur photographers, I have been somewhat crushed by the thought that possibly merit is not the only requirement for success, and such being the case, I am afraid to prepare work for the exhibition of next year, having no hope of success. I have been led to this conclusion by the result of the exhibition of the South London Photographic Society, held just recently. I was not an exhibitor, therefore my opinion is perfectly unbiassed, and I do not give it altogether as an opinion, but am rather seeking information by asking the following questions:—Was it right to expect the judges (gentlemen of good stature and fine physique) to grope about on the floor to find work—pronounced "good" by many members, but which they could not possibly judge well under such peculiar arrangements as these? Is it usual for the judges to have in their hands catalogues which give the number and name of exhibitor clearly set forth, when the conditions distinctly stated: "Names of competitors will be covered during judging"? (By the way, many of us are sorry that the printer did not reap financial benefit from his arduous labours on the well prepared and printed catalogue, which must have taken up a deal of time, and to him—and to the Secretary for his complete list of the exhibits, and to the producer of the woodcut portraits on the front page—all our thanks are obviously attributable; but honour is surely their reward, although unaccompanied by medals). The lantern-slides were splendidly shown; but why, Mr. Editor, were some of them hurried through, and others kept on for a few moments to wait for the applause, and why were some omitted altogether without a reason being given? As an amateur of about two years' experience, my pictures were not anywhere near good enough to be classed with numbers of those which had no opportunity of being appreciated by reason of their separation from each other—some on the ground, some hung where they could not be seen, here, there, on the "find them who can" principle; and my contention, expressed by many others also, is that tactics like these tend to keep such as myself from attempting to join the army of conscientious artists, who desire to make their profession an art, and who look to the expression of the honest judgment of the many (rather than the opinion of acquaintances) as a means to their attaining that end, and this cannot be done, nor our societies make real progress, unless all have the opportunity to receive either compliments or criticism, and surely, sir, this was not the case in the exhibition under notice. I have purposely avoided writing anything that might have caused pain to individuals, but I believe a little wholesome criticism from abler pens than mine may conduce to true "progressiveness" in the Society, which I hope will strive to encourage others who like myself could sign themselves as a persevering and ambitious, in its highest sense, YOUNG MEMBER.

* * * *

MEDALS AND LANTERN SLIDES.

SIR,—In response to your suggestion that readers of the AMATEUR PHOTOGRAPHER should give their opinion on the subject of lantern slides from medalled pictures, it has occurred to me that you might consider the following proposal of some slight value. Let slides from previously honoured negatives be admissible by all means, for the very reason that they are probably as good or better than those competing with them, and why should so many be debarred from seeing a picture on the screen who have had no chance of admiring the original print? I take it that more enjoyment is provided for the greater number by means of lantern shows than by exhibitions, *i.e.*, more for the photographer and his immediate friends, not the general public perhaps. But whom should we first consider?

The plan I propose is as follows: Let the silver medal of the class be given irrespective of the medallist, and honour the latter, *if his work is superior only*, with a *clasp*. He has fought two battles in one campaign. Treat him accordingly.—Yours, etc.,

H. SALWEY.

* * * *

MEDALS AT THE HACKNEY PHOTOGRAPHIC EXHIBITION.

SIR,—I herewith send you copies of correspondence between the Hackney Photographic Society and Mr. J. E. Austin on the question of the medal awarded him for a set of six lantern slides. Should you consider this question of sufficient public interest, you will greatly oblige me by finding a corner in your paper for these letters.—Yours, etc., J. O. GRANT.

"Dear Sir,—I have been absent from home, and no communication on matters photographic were forwarded to me. In reply to yours, I have not been guilty of any violation of your regulations, which I have again carefully perused. I must request that you furnish me with the names and addresses of those who have made the statement you mention, so that I may take legal proceedings against them.

"In your telegram you say, bronze medal for 'Harvest-time.' Has any protest been lodged against this also? Kindly forward to me a catalogue with awards.

"The price of 'Election Time' (including frame) is 30s.—Yours, etc., (Signed) JOHN E. AUSTIN.

"West Court, Detling, Maidstone,
"November 22nd, 1892."

"J. E. Austin, Esq.,—Dear Sir,—In reply to your favour of the 22nd ult., I have to inform you that I have sold the picture 'Election Time,' and have pleasure in enclosing you P. O. value 27s., being the amount named by you, less 10 per cent., as per our regulation.

"The other picture I have given instructions to be forwarded you, and trust you have received it. I also send you by this post bronze medal awarded you for same.

"Now to come to the more important part of your letter, *re* lantern slides. It was undoubtedly remarked during the exhibition that some of your slides had already been awarded a medal. I should not think of supplying you with the names of the gentlemen making the remarks, but thought it only right to give you an opportunity of at once saying if such were the case or not—hence my telegram to you the morning after the judging.

"As I considered the information as to your slides having been medalled before to be from good authority, I have taken the trouble of going to Peterborough and comparing them myself with the set for which you were awarded the AMATEUR PHOTOGRAPHER Silver Medal, and I found that two of the slides, namely, 'Out from School' and 'Off to the Plough,' sent into competition at our exhibition, were the same as two in that set.

"Under the circumstances, the Committee have decided to withhold the medal, and to draw your attention to the following extract from the regulations:—'No prize-picture can compete.'

"As there was considerable talk at the exhibition about this matter, which is of public interest, the Committee feel it their duty to send this correspondence to the photographic Press for publication.—Yours, etc., J. O. GRANT.

"December 3rd, 1892."

* * * *

TUNBRIDGE WELLS ASSOCIATION.

SIR,—I was very much surprised to see in your last issue a leaderette stating that the question of disbanding our association had been discussed, and was still under consideration. I most emphatically deny that such has been the case, or has been contemplated; on the contrary, there are five candidates for election at our next meeting on the 8th inst. I feel it is necessary to take this course as communications from exhibitors express a hope that there is no foundation for the rumour.

I would wish your correspondent "Disgusted" to know that the medals were offered for competition by our association in the same good faith that they have in previous years, and therefore the sentence with which he opens his letter is entirely uncalled for. By inserting this you will greatly oblige, yours, etc.,

JOSEPH CHAMBERLAIN (Hon. Sec).

[We are glad to hear that the above Society are not so disheartened as we were led to believe, on what seemed good authority.—ED.]

* * * *

AN APPEAL.

SIR,—Can you kindly give me a small place in your most valuable paper to make an appeal to my brother amateurs or others on behalf of 200 poor children, for some lantern slides to interest them during the long winter evenings. If you can you will be doing a very great favour indeed. I do not mind of what the slides consist. I have given them a good lantern. I would willingly pay carriage on slides.—Yours, etc., J. F. GRAY.

Essex Villa, Stevenage, Herts.

(Letters to the Editor, continued on page 433.)

ILLUSTRATED SUPPLEMENT,

Monthly Competition, No. 42, "Sea Pieces and River Scenery."

Moss, C. (London).—"The Evening Hour." R. R., *f*/16; half sec., July; Edwards' Medium Iso.: mezzotype, platinum toned. A very effective massing of light and shade, and full of luminosity in the shadows.

Smallpeice, M. (Windermere).—"On the Wey." Watson's R. R. *f*/32; 2 sec., August, 4 p.m.; Ilford ordinary P.O.P. Rather too warm in tone.

Cheyne, Tulloch (Ashton-under-Lyne).—"Sunset at Menai." Wray's R.R., *f*/16; 1-30 sec., August; grey light, 6 p.m. Ilford Iso.; ordinary P.O.P., squeegeed on zinc. Although printed a little too deep, this is another effective study of light and shade.

CLASS I.

Patterson, J. G. (Eskbank).—"Fast Falls the Eventide."

Newland, A. G. E. (Burmah).—"A Moutain Stream in Chinland."

Meynell, H. (Cheadle).—"Barnard Castle."

David, M. S. (Fleetwood).—"Evening at Killarney."

Ball, F. R. (London).—"Lowestoft Harbour."

Curle, C. H. (Melrose).—"A Frosty Morning."

Holt, H. (Liverpool).—"On the Estuary, Barmouth."

Timmins, C. A. (Runcorn).—"Launching the Boat."

Rudge, H. N. (London, W.)—"Dartmouth Castle and Church."

Pearsall, W H. (Stourbridge).—"The Teme, Orleton."

Bruno, H. B. (Portsmouth).



No. 1.] THE EVENING HOUR. *[Chas. Moss.*

SILVER MEDAL.

Carruthers, G. A. (Birkenhead).—"Now came stil Evening on."

Hirst, E. (Cleckheaton).—"Peel, Isle of Man."

Perks, W. G. (Walthamstow).—"The Thames at Greenwich."

Hemmons, W. C. (Clifton).—"Riverside Study."

Pennington, R. O. (Kendal).—"Tarbert Harbour, Looking South."

Lamley, G. (London, E. C.).—"A Reedy Mere."

Wood, C. H. (Brixton).—"A Glance up the Lyn."

Evers, C. J. (Faversham).—"A Quiet Corner."

Eyre, H. S. W. (Crowboro').—"The Beach, Old Hastings."

Burr, F. H. (Gloucester).—"Bidford (Shakespeare's 'Drunken' Bidford)."

Haslehurst, E. W. (Lee, Kent)),—"Sunset on the Thames at Mapledurham."

Barnwell, C. F. L. Rev. (Uttoxeter).—"Toward Evening, and the Day is far Spent."

Forman, E. H. (Louth).—"Sunset and Eventide."

Kauffmann, J. (Zurich).—"A Quiet Nook."

CLASS II.

Banks, J. F. (Norwich).—"West Beach."

Bassano, C. W.—"On the Severn."

Bibby, W. H. (Blackburn).—"After the Thunderstorm."

Bishop, H. H. (Helensburgh).—"Raehill's Glen, Dumfriesshire."

Bucknall, A. T. (Kidderminster).—"Where the Brown Trout Lie."

Camp, S. (Sheffield).—"Castletown Harbour, I.M."

Copeman, R. W. (Henstridge).—"Near Haarlam, Holland."

Dart, H. B. (Torrington).—"At Brienz."

Dowdall, A., Lieut.-Col. (Exeter).—"On the East Lyn, Lynmouth, N. Devon."

Elwes, L. C. (Bideford).—"A Stormy Evening."

Fulljames, H. J. (Wimbledon).—"Sonning Bridge."

Hamilton, A. (Ashton-under-Lyne).—"Marple Woods."

Hand, C. R. (Liverpool).—"Under the Pilot's Wing."

Harvey, C. J. (Kidderminster).—"A Bend in the Severn."

Hodson, J. T. (Ashton-under-Lyne).—"Stockghyll Force."

Kindermann, H. (Kensington).—"River Test, near Mottisfont, Hants."

Kingsford, R. L. (Exmouth).—"Watendlath, Lake District."

Longmore, H. A. (Sydenham).—"A Peaceful Spot on Birnham Burn, Perthshire."

Malan, H. N. (Epsom).—"Sunset over Guernsey."

Morgan, H. G., Rev. (Stoke Lacy).—"Ramsgate Sands, Moonlight."

Nettleship, F. W. (Bawtry).—"A Pleasant View on the Don."

Phenix, H. (Sheffield).—"A Yorkshire Stream."

Rudman, S. C. (Ferry Hill).—"Miner's Bridge."

Scantlebury, N. B. (Chiswick).—"Holme Chase Bridge."

Selby, L. (W. Kensington).—"The Silent Mole."

Snowball, G. L. (Newcastle-on-Tyne).—"On the Liddle."

Teversham, R. (Kilburn).—"Landing Fish, Cannanore, India."

Thompstone, M. W. (Manchester)—"A Stormy Day on the Glaslyn,' Beddgelert, N. Wales.

Tims, J. (Ewell).—"The River Wey."

Uffindell, F. (London, E.C.).—"Mouth of the River Yare."

Wesencraft, H. H. (Tynemouth).—"Durham Cathedral and River."

CLASS III.

Allen, W. A. (Reading).—Boat too central, and print flat.

Allen, J. E. (Sheffield).—Too much foreground, not sharp, and curious blaze of light on right; over-printed.

Anderson, W. S. (Edinburgh).—Flat print; the tree-boughs too offensive on right; print wants trimming down.

Annesty, Mrs. J. (Kempton).—Flat, poor print, and too much foreground.

Arrow, C. G. (London, N.W.).—Flat, grey print, with curiously marked and unnatural sky.

ASKEW, J. R. (Rochdale).—Fearfully over-printed, and the figure not artistic.
BAILIN, R. (London, N.E.).—A flat and dirty print.
BARKER, E. (W. Hartlepool).—A little too flat, and wants clouds.
BATTY, A. C. (Liverpool).—Too flat; would look better on a rough surface in warmer tone.
BAXTER, G. H. (Jersey).—A flat, foggy print in the foreground, and sky too black and heavy.
BINKS, W. (Harrow).—Probably meant for midnight; most fearfully over-printed; a good thing spoilt.
BLOMLEY, C. (Rochdale).—Boat too central, and horizon cuts the plate in two.
BOOTH, J. A. (Reading).—Wanting in brilliancy, and too many straight lines in it.
BOLTON, C. P. (Waterford).—Flat and over-printed; a difficult subject to make a picture of.
BRIERLEY, J. T. (Chorley).—Over-printed, unevenly toned, and too much foreground.
BRIGGS, W. C. (Burton-on-Trent).—Over-toned, with patchy white lights.
BROWN, F. H. (Cardiff).—Boat too central; wants clouds and less foreground
BUCK, T. (London, S.W.).—Flat, poor print, too much foreground.
BURRELL, B. A. (Leeds).—A little too patchy at top to be pleasing.
CAIN, J. J. (Millom).—Over-printed and over-toned.



No. 2.] "ON THE WEY." [*M. Smallpeice.*
BRONZE MEDAL.

CHAPPELL, W. F. (Finchley).—Too much foreground and too little sky.
CHEW, E., jun. (Biggleswade).—Too much foreground, and printed too deep.
CLEMENCE, H. (London, W.).—No matter how artistic this print might be, it would at once be put down low on account of the unequal tones. It is an imperfectly washed bromide, toned with uranium, and is greeny-blue and brown in irregular patches.
COLLIER, R., MISS (Liverpool).—Too much foreground and a little too black and white; boat too central.
COLLINS, A. MISS (Fulford).—Over-printed, and a little too much foreground.
CORNWALL, G. (Derby).—Over-printed and sky too white.
CROOM, J. E. (London, N.).—Sky far too heavy, too deeply printed.
CURRIE, J. E. (London, S.W.).—Spoilt by cutting off top of sail, no pure whites, boat too central.
D'ACTON, C. C. H. (Wincanton).—Printed too deep, and wants more clouds in sky.
DAN, F. (Faversham).—Too black, and wants clouds.
DAVIES, C. V., MISS (Mumbles).—Over-printed and too foggy.
DEAN, S. (Quarmby).—Over-printed, and boat too central.
DOE, C. E. (Leeds).—A little too flat; a rough paper would improve it.
DUNCAN, A. H. (Glasgow).—A good bit of work, but not artistic.
ELLIOTT, W. (Coldstream).—Far too much foreground; the boat is in the centre, and horizon cuts print in two exactly.
EMMETT, W. (South Shields).—Over-printed and wants clouds
FIDOOGE, A. (London, N. W.)—Horizon runs up-hill, too much foreground.
FIELD, A. M. C. (Cambridge).—Over-printed and over-toned.
FORSDYKE, E. (Woolwich).—Wants a sky, and a little too much printed.
FULLS, H. E. L. (London, S.E.)—Flat, poor print.
GETHEN, C. (Hereford).—Foreground too black, vignetting does not improve it.
GILL, R. (Chorley).—Badly stained, dirty print.
GOULD, R. C. (London, S.W.)—Over-printed, and wants some more sky.
GRANT, F. W. (London, S.E.)—Too much foreground.
GRAY, J. (Glasgow).—Good technical work, but not very artistic.
GROUNDSELL, W. D. (Shanklin).—The straight lines of weir not pleasing, and a bad tone.
HALL, H. H. (Eccles).—Over-printed, and too pinky.
HARDING, G. (Stourbridge).—Flat and poor, wants sky.
HARGREAVES, G. R., JUN. (Kendal).—Fair technical work, but print would be improved by trimming.
HARRIS, H. (Hayward's Heath).—Fearfully over-printed, and sky too heavy; a good thing spoilt.
HARROP, A. E. (Gravelly Hill).—Wanting in artistic feeling, and not a pleasant tone.
HARROP, J. A. (Birmingham).—Too black and white; negative harsh.
LANGTON, C. R., MISS (Liverpool).—A little under-printed.
LEGG, F. (Edgbaston).—Over-printed, flat, and poor.
LEWIS, B. A. (Carmarthen).—Over-printed, and fearfully over-toned.
LIGHT, R., CAPT. (Torquay).—Too patchy, and wants a principal object.
LLOYD, J. A. (Mere).—A little too flat, and wants clouds.
LONG, A. H. (Portsmouth).—A good photograph of an old boat, but not artistic.
LYON, E. J. (Wimbledon).—Under-printed, and not artistic.
MACGREGOR, A. M. (Huddersfield).—Over-printed, and wants clouds.
MACMILLAN, M. (Rothesay).—Corners of view cut off by something; not artistic.
MALLINSON, A. W. (Clifton).—Over-printed, and wants sky.
MARRIOTT, E. L. (Liverpool).—Over-printed, and too flat.
MASON, E. (Askrigg).—Over-printed, over-toned, wants clouds.
MASON, J. W., DR. (London).—Utterly spoilt by the hideous yellow tinge all over.
MICKLEM, E., MRS. (London).—Over-printed, over-toned, and wants clouds.
MORTIMER, F. J. (Portsmouth).—Wanting purity in whites, and not artistic.
MOSS, G. (London).—Too much foreground and sky, and water too white.
MURRAY, W. (New Swindon).—Too much foreground, over-printed and over-toned.
HARWOOD, A. C. (Forest Gate).—A little too flat and grey, and the straight tree trunks by no means too pleasing.
HAWKINS, S. (Belper).—Too dark and too patchy.
HENNING, C. (Leeds).—Too dark and spoilt by pink tinge.
HERTSLET, E. C. (London).—Too grey, and the repetition of one set form in the bridge is not pleasant to the eye.
HAWKSWORTH, J. (Leek).—Good technical work, soft and delicate, but too many straight lines.
HEATH, F. P. (Kendal).—Over-printed and too flat.
HEATON, H. J. (Southport).—Over-printed and not artistic.
HOLLAND, B. (Spaldwick).—Ditto.
HOOPER, H. A. (Gateshead).—A very good thing spoilt by want of toning.
HUMAN, E. (New Swindon).—Over-printed, and print shows considerable number of spots, etc.
JAMES, T. (Worcester).—Too grey and flat; wants sky.
JONES, G. J. (Malton).—Too much foreground, wants clouds, and over-toned.
KIRKPATRICK, J. (Omagh).—We object to an horizon which runs up-hill, and over which clouds have been printed.
KITTON, F. (Preston).—Over-toned, and not artistic.
LAIDLER, T. S. (Fellington-on-Tyne).—Another horizon which runs up.
LAMBE, D. W. (Edinburgh).—Flat, over-toned, and foggy.
NIEL, R. (Edinburgh).—Over-printed and not artistic.
NUGENT, J. (Dalkey).—Wants clouds.

Parker, J. E. D. (Liverpool).—Flat, poor, and much stained.
Pasco, G. S. (London, N.E.)—Wants clouds and no vignetting.
Patterson, T. (Preston).—Wants clouds and no figure.
Pearce, R. J. (Durham).—Over-printed and over-toned.
Pearce, W. B. (Wednesbury).—A very poor, flat print, and not free from stains.
Perkins, E. A., Mrs. (Shaftesbury).—Utterly spoilt by want of clouds.
Petty, D. (London).—Over-printed, flat, and poor.
Playfair, J. M. (Belfast).—Good technical work, but not artistic.
Preston, G. (Cornwall).—Water and sky too white.
Pruce, J. C. (London).—Flat and poor.
Ramsden, L. G. (London).—Over-printed and wanting in brilliancy.
Remfry, F. E. (Exmouth).—Too black and white; a very poor and not clear print.
Reynolds, B. (London).—Wants clouds, and a bad tone.
Rhodes, R. (Kendal).—Over-printed, and wants clouds.
Richardson, J. T., Mrs. (Nottingham).—Utterly spoilt by want of clouds.
Roberts, C. A. (Liverpool).—Too much foreground, and wants clouds.
Roberts, D. O. (Kensington).—Wants clouds.
Robertshaw, J. (Hebden Bridge).—Over-toned, and a hideous pink tinge over all.
Rowell, T. B. (Newcastle-on-Tyne).—Too harsh, and unequal in tone.
Sanderson, T. H. (Cambridge).—Over-printed, and wants clouds.
Savage, G. A. (Folkestone.)—The cloud is unfortunately lit from the opposite side to the lower part.
Scott, T. B. (Belfast).—Fearfully over-printed and untrue.
Scott, E. (Cork).—Over toned, and not artistic.
Scott, M. A. (Oban, N.B.).—Badly mounted and all sorts of colours.
Seabrooke, H. C. (Grays).—Too much foreground, wants clouds.
Selby, H. (London).—Unequal toning, and it contains two pictures.
Shaw, R. (Coniston Lake).—Too black and white, and spoilt by the shading at top.
Simpson, J (Dublin). — Wants clouds, and another horizon running up.
Slater, J. Y. (Wintersett).—A very poor, muddy, foggy, dirty print.
Smith, H. (London).—Clouds, instead of a tinted sky, would have looked better, and sail too black
Spalding, F. W. (Norwich).—Printed on rough paper, with suitable clouds this might make a picture.
Speirs, J. W. R. (Haltwhistle).—Flat, poor print; boat too central.
Stimson, T. (Southampton).—Fearfully over-printed, horizon running down, nothing artistic in it.
Slit, J. C. (Liverpool).—Utterly spoilt by the want of clouds.
Smelt, C. S. (Wisbech).—Too much foreground and sky, and clouds too heavy.
Stacey, F. H. (Sheffield).—Wants clouds badly, printed a little too dark.
Stone, G. F. (Bristol).—Too dark, and the two straight tree trunks offensive.
Taylor, N. W., Miss (Barnet).—Wants 1½ in. less foreground, and church too central.
Terry, W. (Bristol).—Degraded whites, and not artistic.
Terson, T. A. (Dover).—Too black and white, contrasts too great, and a warmer tone would suit it better.
Thirkettle, W. L. (London, N.)—A very poor print indeed, the boat is intensely black, and there is just a faint indication of water and nothing else.
Thomas, W. J. (London, W.C.).—Wants clouds badly, and print flat.
Thompson, H. (Harrogate).—Printed on rough paper this might be an effective bit, but the negative wants dodging considerably.
Tipping, E. P. (Richmond, Surrey).—Utterly inartistic and poor print.
Usher, G. T. (London, N.W.).—The straight line of bridge is a little too offensive, and should have been broken on left.
Vulliamy (Radnorshire).—Over-printed and too harsh.
Wagner, W. G. (London, W.)—A nasty yellow print without any artistic qualities.
Wakeman-Newport L., Mrs. (Bewdley).—Too flat and wants more decided clouds.
Welch, J. H. (Liverpool).—Wants clouds, and a lighter, warmer tone would improve it.
White, M. (Wimbledon).—An awful yellow monstrosity due to sulphur toning.
Wilding, P. P. (Preston).—Point of view too low, wants sky to relieve it a little.
Wilkinson, A. (Manchester).—An awful colour, not terra-cotta, and no pure whites.
Williams, J. (Festiniog).—Over-printed, over-toned, and not artistic.
Williamson, L. W. (Darlington).—Too much cotton-wool foreground, wants some sky, a little too dark.
Wilson, F. E. C. (Liverpool) —Boat too central; wants clouds.
Winn, E. (Birmingham).—Printed too deep, does not want the figure of child, and a little too much foreground.
Wood, J. G. (Glasgow).—Not artistic, and taken wrong way of plate.
Wood, P. E. (Edgbaston).—Too dark altogether, wants sky, and should, we think, have been taken the other way of plate.
Woodward, F. G. (Bath).—Utterly without interest of any kind.

The tail of this competition receives this month a brief note on its prints, the first and second class being ignored.

The quality of the work of the two first classes is decidedly high, but there is a tendency to overdo the rough surfaces and hot tones which is not wise.

The prevailing faults in the third class are blank skies, horizons which will run up and down at all sorts of angles, printing too deeply, and the principal object too much in the centre. Some competitors seem to think that as long as the camera is put down somewhere, the result must be a picture. No idea of selection or artistic arrangement of the masses of light and shade by shifting the point of view seems to enter their head. On the other hand, many prints are excellent in technique but purely topographical studies. Photo-topography, like photogrammetry, may be a good and useful science, but unfortunately in our monthly competitions the judges are unkind enough to look for a little artistic work. The winner of the Silver Medal is to be congratulated upon the result he has obtained. It is purely an effect of light and shade, true in tone, with all obtrusive detail subordinated, and as we have seen the gradual progress made by him during the last twelve months, and we do not think he is much older in photography, his career will serve as a good lesson to some of our younger workers. That a competitor may by a happy fluke take first or second place is unfortunately too true, but we can almost point out certain competitors who will, ere long, take our medal, as each month sees an improvement in their work.

Technique and artistic merit both score, the latter more especially, and every competitor should remember this, and try by dodging negatives, trying different printing processes, trimming his prints down, to take yet a higher place in our monthly trials.



No. 3. SUNSET AT MENAI *[Tulloch Cheyne.*
CERTIFICATE.

A notice is appearing every week in the *Fishing Gazette*, giving particulars of money prizes offered for piscatorial photographs taken by anglers.

Notes on the Exposures for Moving Objects.

BY LT.-COL. E. T. D. COTTON-JODRELL, M.P.

IN connection with instantaneous photography the following problem offers itself for solution.

If an object be at a distance, D, from the lens of a camera, moving at a speed, S, what is the maximum limit of an *adequate* exposure, X, in order to obtain a "sharp" picture with a lens whose focal distance is F; (1) where the object is moving in a direction at right angles to the axis of the lens; and (2) where the object is moving in an inclined direction to the axis?

Case I.—Object moving at right angles to the prolongation of the axis of the lens.

We will first illustrate the method of solution by assuming a particular instance, and subsequently endeavour to show, by algebra that the same reasoning is true for all cases.

Suppose the object we wish to photograph to be moving at the rate of 20 miles per hour (which = 10 yards in one second nearly), and to be distant 100 yards from the lens, which is of 8 in. focal length.

Now, it is known that the motion of the image of such object on the plate should not at most exceed $\frac{1}{100}$ of an inch, in order that a practically "sharp" picture may be obtained.



FIG. 1.

Let O O′ = space moved through by the object during exposure.
L = lens.
F F′ = maximum movement on the plate = $\frac{1}{100}$ inch.
O L = 100 yards.
L F = focal distance = 8 inches.

Then by similar triangles we have—

$$O O' = \frac{O L \times F F'}{F L} = \frac{100 \times 3 \times 12 \times \frac{1}{100}}{8} = \frac{36}{8} = 4\frac{1}{2} \text{ inches.} \quad (1.)$$

Thus, under the given conditions, the object in motion can be exposed only for such an interval of time as will restrict its movement during exposure to $4\frac{1}{2}$ inches, so that the picture may be sharp. This interval is easily calculated: as the object is known to be moving at the rate of 10 yards per second, how long will it take to move $4\frac{1}{2}$ inches? Let x = the time—

Then 10 yards : $4\frac{1}{2}$ inches :: 1 second : x, (2.)

or $x = \frac{1}{80}$ of a second, which indicates the speed of the shutter or limit of exposure required. By a similar process, it will be seen that at the same distance from the camera, but with the object only moving at half the speed, the exposure may be doubled, at a quarter the speed quadrupled, and so on. On the other hand, if the distance be reduced, the exposure must be proportionately quickened. In stating the problem, the words "adequate exposure" were used, and we assume, of course, that the conditions of light, plate, etc., are such that the exposures are sufficient for the picture.

Optics teach us that with lenses of other focal distances, the times of exposure must be inversely in the proportion of the squares of those distances, assuming the apertures of the lenses to remain the same, and we shall show hereafter that the size of the aperture of the lens does not enter into the present problem, and may be disregarded.

Suppose that we now substitute a lens of 4 inches focus for the 8-inch one. Assuming the aperture to be unity, we may for shortness call these two lenses F 4 and F 8 respectively, in accordance with the ordinary nomenclature.

The speed of these lenses varies inversely as the squares of their focal lengths; therefore

Speed of F 8 : speed of F 4 :: $(4)^2$: $(8)^2$
:: 16 : 64
:: 1 : 4

Therefore if, as we have seen, a certain object can be properly exposed by the F 8 lens in $\frac{1}{80}$ second, a similar result will be obtained by the F 4 lens in $\frac{1}{20}$ of a second.

But now comes in the question of the moving object. Going back to the standard equations (1) and (2), we see that during $\frac{1}{80}$ second the object moves $4\frac{1}{2}$ inches; in $\frac{1}{20}$ of a second it will therefore move 18 inches; but this amount of movement will cause corresponding motion on the plate sufficient to enlarge the diameter of the proper "circle of confusion" from $\frac{1}{100}$ to $\frac{1}{20}$ of an inch, which will not produce a satisfactory picture. This, however, is with 8 inches focus; the question is, how will the alteration of the focus to 4 inches affect the picture?

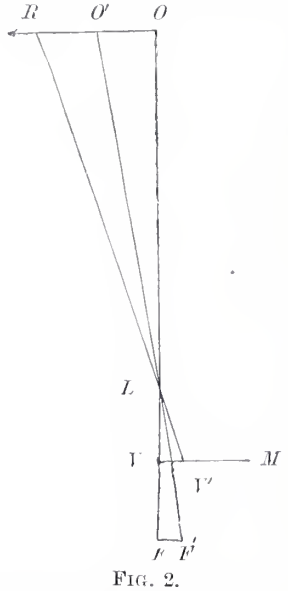


FIG. 2.

Refer to the figure of similar triangles once more. Make L V = 4 inches. Through V draw V M parallel to FF′, and mark off VV′ = $\frac{1}{100}$ inch. Join V′L, and produce it to R. Now it is obvious that with the shorter focal distance LV, the movement of the object during exposure can extend to R, and yet be sharp on the plate so long as VV′ does not exceed $\frac{1}{100}$ inch.

To find O R by similar triangles:

O R : O L :: VV′ : V L
: 100 yards :: $\frac{1}{100}$ inch : 4 inches

$$\therefore O R = \frac{100 \times 3 \times 12 \times \frac{1}{100}}{4} = \frac{36}{4} = 9 \text{ inches.} \quad (3.)$$

Therefore, with the shorter focal distance sharpness can be obtained if the object moves 9 inches during the exposure of the plate. And we see that although an exposure which permits a movement of the object of 18 inches will not produce sharpness, yet a good picture will result when the motion is 9 inches. How long an exposure must be given? We have seen that for correct exposure our F 4 lens requires a period of $\frac{1}{20}$ of a second to produce the same result, which can only be obtained by F 8 in a quarter of the time. But during $\frac{1}{20}$ of a second the object moves 18 inches; how long is the interval in which it will only move 9 inches? Let x' = the time.

18 : 9 :: $\frac{1}{20}$: x'

$$\therefore x' = \frac{9 \times \frac{1}{20}}{18} = \frac{1}{40} \text{ of a second.}$$

Thus by increasing the speed of our shutter from $\frac{1}{20}$ to $\frac{1}{40}$ of a second we can produce the same result with a 4-inch focus lens, as our original F 8 lens with a shutter obliged to work at a speed of $\frac{1}{80}$.

We now propose to investigate the problem by means of algebra, and to obtain therefrom a formula which shall be applicable to all objects moving at right angles to the axis of the lens. The question of the effect of varying apertures will also be included so as to prove the statement already made that the size of the aperture does not affect the problem before us.

From the preceding figures 1 and 2, we get the following equations:

Fig. 1. $$OO' = \frac{O\,L \times F\,F'}{F\,L} \qquad (4)$$

Fig. 2. $$OR = \frac{O\,L \times V\,V'}{V\,L} \qquad (5.)$$

Let A and B be the apertures of two lenses.

O L = D = distance of lens from object in inches.
O O′ = s = space in inches moved by object in exposure 'x' secs.
O R = s' = space in inches moved by object in exposure 'x'' secs.
F L = f = focal length of lens A.
V L = v = „ „ „ B.

Substituting in (4) we get—

$$s = \frac{D \times \frac{1}{100}}{f} = \frac{D}{100\,f} \qquad (6.)$$

Now we know that the times of exposure vary inversely as the squares of the apertures of the lenses employed, divided by the squares of their focal lengths, so that

$$x : x' :: \left(\frac{B}{v}\right)^2 : \left(\frac{A}{f}\right)^2$$

$$\text{or, } x' = x \times \frac{\left(\frac{A}{f}\right)^2}{\left(\frac{B}{v}\right)} \qquad (7.)$$

Let R = the rate at which the object moves in *one* second; then as s = the rate (or space through) which the object moves in x seconds, consequently—

$$R : 1 :: s : x$$

$$\therefore x = \frac{s}{R}, \text{ and substituting the value of } s \text{ from } f \text{ (6)}$$

we get $$x = \frac{D}{100\,f\,R} \qquad (8.)$$

Now, if s represents the utmost limit through which the object can move to give a sharp picture with lens A, it will, owing to the altered exposure permissible with lens B, move through a space

$$s' = s \times \frac{\left(\frac{A}{f}\right)^2}{\left(\frac{B}{v}\right)^2} \qquad (9.)$$

since the object moves at a uniform rate, and

$$\therefore s : s' :: x : x'.$$

And if s' be greater than s it will increase the diameter of the "circle of confusion" $\frac{1}{100}$ of an inch, so that a sharp picture is impossible.

From the arithmetical case taken we saw that with the shorter focus lens the space through with the object moved might be extended to R (OR), and yet keep the diameter of the circle of confusion to $\frac{1}{100}$ of an inch. It is obvious that the aperture of the lens does not affect this.

So we get from (5)

$$OR = \frac{OL \times VV'}{V\,L} = \frac{D}{100\,v} \qquad (10.)$$

which we will denote by s''.

Therefore, as we have showed before, any exposure during which the object will move only through s'', will produce a sharp picture.

What is this exposure x''?

As before, the object moving at a constant rate,

$$x'' : x' :: s'' : s'$$

$$\therefore x'' = \frac{x' \, s''}{s'}$$

Substituting value from equations (7), (10), and (9), we get—

$$x'' = x \times \frac{\frac{\left(\frac{A}{f}\right)^2}{\left(\frac{B}{v}\right)^2} \times \frac{D}{100\,v}}{s \times \frac{\left(\frac{A}{f}\right)^2}{\left(\frac{B}{v}\right)^2}}$$

$$= x \times \frac{\frac{D}{100\,v}}{s}$$

Substituting again the values of x and s from equations (8) and (6) we have—

$$x'' = \frac{\frac{D}{100\,f\,R} \times \frac{D}{100\,v}}{\frac{D}{100\,f}}$$

Or— $$x'' = \frac{D}{100\,v\,R} \qquad (11.)$$

This gives a general formula, and shows that it is independent of the size of the aperture of the lens, and assuming that the focus of the lens be known, as of necessity it should be, and any two of the other quantities known, the remaining one can be found, and all questions connected with the stated problem can be solved, as long as the object moves in a direction at right angles to the axis of the lens.

It remains for us to investigate the case where the object moves obliquely to the axis.

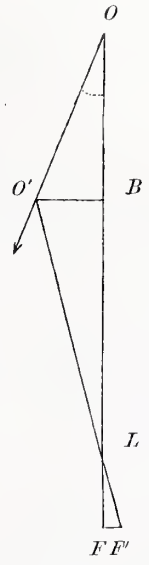


FIG. 3.

Case II.—Suppose the object to be moving at an angle θ to the axis of the lens L, as before, so that O′OL = θ.

Using as far as possible the same letters as in previous diagrams, we get in fig. 3—

OL = D = the distance of the object.
FL = f = the focal distance.
FF′ = $\frac{1}{100}$ of an inch.

Through O′ draw O′B perpendicular to OL; now although it must appear from inspection that the motion of the object while passing from O to O′ as represented on the plate during exposure is that corresponding to a distance BO′, nevertheless OO′ is really the *space* through which the object actually moves during the exposure "x." Therefore we must in this case still consider that OO′ = S = space through which the object moves in x time, the limit being, as before, that the diameter of the circle of confusion shall not exceed $\frac{1}{100}$ of an inch.

Denote the angle FLF′ by ϕ, then the angle O′LB also = ϕ, since it is equal to the angle FLF′, by Euclid, I., 15.

Also $$\tan \phi = \frac{FF'}{FL} = \frac{\frac{1}{100}}{f} = \frac{1}{100\,f}.$$

From Fig. III. we get—

$$BO' = OO' \sin \theta \qquad (12.)$$

Also BO′ = BL tan ϕ.
= (OL − OB) tan ϕ.
= (D − OB) tan ϕ.

And OB = OO′ cos θ.

$\therefore$ BO′ = (D − OO′ cos θ) tan ϕ.

$\therefore$ from (12) OO′ sin θ = (D − OO′ cos θ) tan ϕ.

Substitituting for tan ϕ—

$$OO' \sin \theta = (D - OO' \cos \theta) \frac{1}{100\,f}$$

Or—

$$100f \times OO' \sin\theta = D - OO' \cos\theta.$$

Or—

$$OO' (100f \sin\theta + \cos\theta) = D.$$

$$\therefore OO' \text{ or } S = \frac{D}{(100f \sin\theta + \cos\theta)} \qquad (13.)$$

Now OO is, as we stated, the space through which the object moves during exposure, x.

And as in Case I., where R is rate at which the object moves in one second—

$$R : 1 :: S : x, \text{ or } S = R\,x.$$

$$\therefore \text{ from (13)}$$

$$x = \frac{D}{R\,(100f \sin\theta + \cos\theta)} \qquad (14.)$$

Now, as cos θ by itself can never exceed unity, it may practically for the purposes of photography be disregarded, as producing a valueless effect on the whole fraction, even when R be taken into account, as it is neutralized by the product of R and sin θ.

Therefore we may write the equation as—

$$x = \frac{D}{R\,100f \sin\theta} \qquad (15.)$$

Thus we get two standard equations—

$$\text{from Case I. } x = \frac{D}{100f\,R}, \text{ and}$$

$$\text{from Case II. } x = \frac{D}{100f\,R \sin\theta}$$

Suppose $\theta = 90°$, so that sin $\theta = 1$, then $x = \frac{D}{100f\,R}$, which is the same as in Case I.

This completes the investigation into the maximum exposure for varying distances and focal lengths of lenses, for it is plain that if the case be taken of the object moving obliquely away from the lens, the conditions attached to finding the value of OO′ are unaltered, and therefore the formulæ are true in all cases.

It may be asked, "*Cui bono?*" For it is certain that no photographer could look at a moving object and spare the time under ordinary circumstances, to calculate the value of sin θ before taking his shot. No, but work may be done beforehand; a very broad approximation to the actual movement will suffice; some of the best known angles may be taken, distances and rates of speed worked out which are sufficient for all the practical purposes of a sharp picture; at any rate people may be prevented from attempting absurdities such as the writer did when he once tried to photograph a house fifty yards from a train going 60 miles an hour with a shutter which gave an exposure of about $\frac{1}{10}$ of a second.

It may be, too, that these calculations will be possibly of some service in the problems of astronomy, to which photography is now giving such valuable aid, but this is soaring into those boundless realms of space with which the writer is unacquainted.

Two tables are appended, the first giving an approximate movement per second for objects at so many miles per hour, and the second giving sundry values of sin θ.

TABLE A.

Object moving, miles per hour.	Yards per second.	Remarks.
100	50	
60	30	Trains.
40	20	Trains.
20	10	Trains.
12	6	Steamers.
10	5	Steamers.
8	4	Horse trotting.
6	3	Carriages.
4	2	Carriages.
3	$1\frac{1}{2}$	Man walking.
1	$\frac{1}{2}$	Man walking.

TABLE B.

When $\theta = 90°$, sin $\theta = 1$.

" $75° = \frac{\sqrt{3}+1}{2\sqrt{2}}$

" $60° = \frac{\sqrt{3}}{2}$

" $53° = \frac{4}{5}$ nearly,

" $45° = \frac{1}{\sqrt{2}}$

When $\theta = 37° = \frac{3}{5}$ nearly.

" $30° = \frac{1}{2}$

" $15° = \frac{\sqrt{3}-}{2\sqrt{2}}$

" $0° = 0$.

—*Camera Club Journal.*

Photography as an Art.

ITS REQUIREMENTS, CLAIMS, AND FUTURE AS SUCH

BY G. T. NICHOLL.

IF you wish to become an artist-photographer, avoid the hand-camera as you would a plague. I do not mean you to infer from this that it is impossible to take an artistic picture with a hand-camera, because I myself have seen many proofs to the contrary. You have only to glance at the display in the windows of the Eastman Photographic Co. or the London Stereoscopic Co. to be convinced that the capabilities of the hand-camera in the artistic line are by no means limited. But my belief is that, in art, labour-saving apparatus are in many respects fatal to the development of the artistic habit. An artist is not a man who pulls a string or presses a button and leaves the rest to the fickle caprice of the goddess fortune. No! an artist is a planning, thoughtful, imaginative being, using all the talent with which every man is more or less endowed, to produce an effect which he desires. He must make up his mind to a certain degree what his work is to look like when completed. Do you think the great Turner himself, when he sat down to paint any of his wonderful pictures, did not set himself a certain standard up to which he would work, keeping in his mind's eye the effect which was presently to be portrayed on his canvas? In the same way the much-maligned photographic artist should know every detail of the picture which will reveal itself to him in the dark-room. He should know every shadow, every light, so as to form accurate ideas as to whether a plate has been over or under exposed, and act in accordance with those ideas.

And now a few words as to the way to set to work to create an artistic photographic picture.

When in the field caution is very necessary whilst prospecting for a view. "All is not gold that glitters" is a proverb which has no better exemplification than in the case of photography. For instance, the shady glen, with silver brook rippling through, gleaming with light which filters through the leafy meshes overhead; *this* may look a picture for a medal, in anticipation. But, alas, how often are our brightest hopes in this world blighted—even in photography! The print which results from our negative reveals no trace or semblance of the lovely scene we had thought to depict. The shady glen was too shady, the silvery brook too glittering; the one is represented only by a mass of heavy black, the other by a smear of chalky white. On the other hand, on our way home, perhaps for the sake of using up an extra plate, we take a group of common-place farm buildings, surrounded with pastures and corn-fields, a few haystacks, a country lane, taken from some distance; this has turned out one of the most charmingly artistic pictures in our collection. And why is this so? The fact has been seized upon, by those who would deny photography the honour of a place as an art, as a strong argument on their side. They say that the fact that so common-place a subject as the farm and its surroundings makes a prettier picture and more artistic than the sylvan scenery of the glen, is only a proof of how unnatural the productions of the camera often are. I say it is no proof whatever of this, and that those who say so must indeed, on this subject at least, be "sightless seers and thoughtless thinkers." If it proves anything it proves only how our artistic discernment may be blunted by familiarity with a subject. It is only yet another good illustration of the proverb "Familiarity breeds contempt." If we were in the habit of seeing the latter scenery as often as the former we should doubtless pass it by without a thought as to its artistic beauty.

Again, the fact that the attempt to reproduce the violently contrasted effects of light and shade which so enchanted us in the original has proved a failure is no proof of the inability of photography to reproduce art in Nature. It was merely a failure because the circumstances under which the scene looked

so bright were such as to hinder the lens of the camera doing its work in a satisfactory manner. There is no doubt that under special circumstances the painter would fail to give effect to the scene. And yet no one has ever been, or ever will be, bold or stupid enough to deny painting a front place in the ranks of art on that account. Those who engage in a controversy on behalf of photography as an art have a tough battle to fight. Their opponent is hydra-headed. Even supposing that they have succeeded in drawing from him the admission that pictures of great artistic merit have been produced by photography, there is yet another argument ready to hand. He will tell you that such pictures, good as they are, are not the result of a man's talent, or even of his ingenuity, but merely of the *careful* working of a machine. He cannot recognise that these results are not due entirely to the operation of the actinic rays upon sensitive plates, but are rather in great measure to be attributed to the manner in which the beautiful and accurate draughtmanship of such rays has been put to service, and with all the aid that science can lend, guided by the artist with his powers of selection and arrangement, has wrought wonderful works of art which delight the eye and enchant the imagination. But I have wandered from my original purpose—that of putting before you a few hints as to the methods of obtaining artistic pictures with your camera. I considered it necessary, however, to introduce a few words on the controversy, as, though it is not one by the decision of which one way or the other the practice of photography will stand or fall, it is, I think all will agree, sufficiently important to justify the digression I have made in its behalf.

Another very important thing to be guarded against is the indiscriminate introduction of life into a picture. There is no doubt that in many cases "life" does not only heighten the interest of a picture, but increases its artistic beauty. If, however, humanity is introduced into a picture, it must be as humanity, and not be so arranged that the picture looks like the representation of some amateur waxworks. The figures should set off a landscape, not *vice versa*, if it is the landscape we intend to take. If we wish to "make up" a picture—that is, to represent pictorially a phase of life or human nature—it certainly should be done with as little "make up" and posturing as possible. Here comes in the usefulness of the hand-camera. A snap-shot may be taken of a bit of courting, or of a person seized with sudden fright, under titles such as these: "Bill and Coo," and "Oh!" without the parties concerned being any the wiser, and so natural pictures, if not always artistic ones, are secured. In cases where landscapes are to be set off by the introduction of life, a snap-shutter camera at least is absolutely necessary for success. From behind a hedge a landscape may be taken with haymakers at work, which shall draw admiration from the most determined enemies of photography as an art.

I have in my mind's eye a picture I once saw of a hayfield in which there were about twenty men and women at work. Here the photographer had shown himself anxious, no doubt, to exhibit his prowess to such a crowd of admirers. All forty eyes gazed in one direction with a fixed stare, and every form was bolt upright. This picture was labelled "Haymakers at Work." The fitter title would have been "'Tention in the Hayfield." How much better the picture would have looked if the figures had been depicted in various attitudes of work.

Another very common error is that of having the main object of a picture in the very middle. Symmetry is well enough in its place, but it is seldom artistic when dealing with Nature as a model.

Taking a glance at the place art takes in portraiture, I would say that nothing disgusts me more than to see the extent to which the so-called artistic or rustic scenery is used. Only the other day I saw an instance in the window of one of our best photographers in Bond Street—a large picture, excellent in execution and finish, of a young lady in a wintry costume of furs and muff, sitting out of doors at a rustic table with a background of palms and other tropical plants. The fact was the man liked the background, and would even go to the extent of making himself ridiculous to drag it into his pictures. My only wonder is that the lady did not recognise the incongruity of her "surroundings" and insist upon an alteration. It would be so much better if it were the habit of professional photographers to consult their customers a little as to what they think would be the best styles and the best scenery. For my part I should like to see all "artistic backgrounds" and "scenic effects" at the bottom of the sea. Heaven forbid that we should ever return to the days when a white sheet or a blanket were thought sufficient backgrounds. But if you want a portrait taken, have it taken in a natural position and amongst natural surroundings. Our forefathers did not require to be "taken" by the painter swinging in a hammock or leaning over a balustrade. I am a Conservative, and I would like a little more of the old style of art in the new science. Let those who hear me, next time they have their photographs taken, try having it done at their own homes. Of course, there are many cases in which this is impossible, especially in London, but I think if it is possible, the value of the pictures will be greatly enhanced to those who are recipients of copies. Of course, the artistic and rustic effects I have mentioned have their peculiar charm for a certain class. 'Arry likes to be taken sitting with his 'Arriet upon a swing, with his arm round 'Arriet's waist; and if he like it, it is harmless enough. But be it remembered this is not portraiture, but only the burlesque of portraiture.

The use of effects would seem to become more necessary where two or more persons form the subjects of a picture, it is true. For where one person sitting in a position of rest or standing would look very well, two or more in similar positions might look ridiculous. There are, however, many ways of avoiding this without using effects. Into these I cannot now enter.

Let me only add that I believe there are still grand things in store for photography as an art. We have only to look around us and compare the achievements of the last few years with those of the past, to see that photography daily becomes more artistic. The result is that our pictures are no longer merely relegated to the obscurity of a big album, but form an important factor in the decoration of our homes. This is as it should be. By all means let us aim at high art, but let us also seek to attain that perfection in the manipulative science upon which alone success in our endeavours depends.

The Reflector with the Projection Microscope.

Mr. G. B. Buckton contributes the following letter to a recent issue of *Nature*, which we think deserves the attention of all lanternists:—

"The lantern is now used for so many purposes—scientific, photographic, and recreative—that any improvement in its construction will be acceptable. When we look into this instrument whilst at work we must be disappointed at the large quantity of light lost by reflection and by dispersion—light which ought to go to the illumination of the screen. In the ordinary form of the lantern three lenses of dense glass are employed as condensers. Each of these six surfaces reflects and scatters the light, and the glass itself is absorbent of its rays.

"The dioptric construction of the projection lantern has been well worked out by Messrs. Wright, Newton, Salomons, and others, but the catoptric principle, which would eliminate almost entirely these disadvantages, has been scaroely at all studied.

"Although my experiments have been made solely with the lime-light in various forms, the following remarks may equally apply to light given by the electric arc:—

"If a reflector be used instead of the ordinary condensers it is obvious that the position of the lime cylinder must be reversed. This will present no difficulty, for the tube holding the jet can be bent into a helical form. The dark image of the lime cylinder also will have no more practical disadvantage than is experienced by a like image formed by the small plane speculum of the Newtonian telescope.

"As to the mirror itself, although a parabolic form is the most correct, a spherical surface will be sufficient for mere illuminating purposes, and thus expense may be spared in the grinding of the more difficult curve. A speculum of from 5 to 7 inches diameter, having a radial curvation of from 2½ to 3 inches, will grasp a large quantity of light, much more than that obtainable from the 5-inch condenser usually employed.

"Silver deposited by one of the various reducing processes on the surface of a clear glass lens will have many advantages over a metal mirror. The front surface will give perhaps the finest definition, but by silvering the back part of a spherical glass film, or that of a ground lens, the brilliant surface will remain untarnished for an indefinite time, and the whitish bloom formed by slow volatilisation of the incandescent lime is easily removed. The silver film adheres with remarkable tenacity, and it will bear a great deal of heat without blistering or becoming detached.

"I have had considerable success in constructing such mirrors from the large ornamental glass spheres blown in Germany, and silvered within by Liebig's process, viz, with milk sugar and ammonio nitrate of silver. A glass sphere of 10 or 11 in. in diameter may be easily cut into eight or nine mirrors by a red-hot iron, and this without disturbing the silvering, which will require only gentle friction with a pad of cotton impregnated with a trifle of rouge to brighten it. Thus, at the cost of a few shillings, eight or more mirrors can be made, and also provision be made against possible accidents of racking by heat.

"The light-radiant is so placed that the secondary focus is intercepted by a plano-concave lens of dense glass, as has been happily proposed by Mr. L. Wright. The convergent rays from the speculum are thus made into a parallel beam, which must be deprived of its heat by an alum-trough, for the light and heat at the substage condenser is very great.

"Convergence, I find, is usefully promoted by a plano-convex lens of about eight inches focus, placed two or three inches before the above-noted plano-concave lens. In all other respects the arrangements are like those of the usual modern projection microscope.

"I have pretty constantly used the ether-oxygen saturator, and I consider it to be perfectly safe, if ordinary precautions be taken. The oxygen, compressed in cylinders, is much recommended, as there can be no mixture of vapour, except at the right place. The U-shaped horizontal saturator, plugged with flannel, must be well charged with ether, or with the best gasolene, and care should be taken, before beginning or ending an exhibition, to shut off the oxygen tap before closing the ether tap. This will prevent the harmless 'snap' from the mixture in the small chamber at the joining of the gas tubes. If a disc more than eight feet be required for the microscope, it will be well to use hydrogen gas instead of ether, since the calibre of the jet cannot in the ether light very well exceed $\frac{1}{12}$ of an inch.

"As an extra security, I pack the mixing chamber with asbestos fibre, moistened with glycerine; but, as before urged, the oxygen must leave the saturator, saturated.

"To insure the coincidence of the foci of the reflector with the optical axis of the microscope, it will be well to place three adjusting screws in a triangle behind the mirror, and this last may have both a small vertical and horizontal movement

"I claim for this catoptric arrangement a larger grasp of light than can be got from ordinary lenses, and this may be effected also at a small outlay. For the amateur constructor the plan will afford many advantages."

Scientific Research in Photography *

By J. REYNOLDS, M.A., F.R.G.S., President of the Brixton Camera Club.

THERE has been of late a wholesome spirit of emulation in the different classes of work, and a happy tendency among our members to abandon the old albumenised paper printing and to turn attention to the superior results obtainable by the platinum (hot and cold bath), the carbon, the bromide, the gelatino-chloride, and plain salted paper processes, specimens of each of which can be inspected to-night. The desire is to gradually raise this Club out of the narrow groove of ordinary photography, and in the near future to encourage scientific inquiry into the causes of the various phenomena connected with the subject by independent original research. More men are wanted, earnest workers in all branches which the amateur can with the aid of a little perseverance master, viz., photo-micrography, meteorological photography, photo-ceramics, and also some of the simpler photo-mechanical operations. Then others are wanted who will experiment in the direction indicated by the Diazotype, the production of photographic impressions by means of the aniline dyes; and lastly, some men with a certain amount of training in chemistry and physics, who will devote some of their efforts to the solution of that very difficult problem, photography in natural colours. A short account of what has been done in this direction from the time of Dr. Seebeck in the year 1810 downwards, to the researches of Edmund Becquerel, with dates and names of chief workers, were given in a paper by the Vice-President (Mr. W. H. Harrison), in the "Photographic News Year Book" for 1890, and anyone contemplating experiments in this direction cannot do better than refer to the article.

It appears that the first person to obtain coloured impressions upon paper prepared with chloride of silver was Dr. Seebeck in 1810.

Next, Sir John Herschel, in 1839 or 1840, in a communication to the Royal Society, stated that he had obtained a coloured impression of the solar spectrum on paper prepared with chloride of silver. Afterwards, Hunt, in 1844, stated the fluoride of silver is very sensitive to the coloured rays, and that the yellow was well marked; that particular colour could hardly be detected in the images by Seebeck and Sir John Herschel. Then followed the splendid experiments and researches of Edmund Becquerel, an investigator who did more than almost anyone to develop colour photography, and his best results were obtained by taking a highly polished silver plate and depositing thereon, by means of the voltaic current, a thin film from a solution of the perchloride of copper in an aqueous solution of chlorine gas, and subsequently drying the plate by means of a gentle heat; and on plates prepared in this way he is said to have obtained all the colours in a picture. More recently, in fact down to the present moment, M. Lippmann has not only produced photographs in natural colours, but has shown us that the result is brought about by the interference of light, and that to get a vivid impression it is necessary to have a brilliant reflecting surface in optical contact with the sensitive film, and that, no doubt, is why the coloured images which were occasionally produced on the old daguerreotype silvered plates were produced, viz., because the actual surface of the plate was iodized, so that there was necessarily absolute contact between the sensitive and the reflecting surfaces. Lippmann's plan is to coat a glass plate with collodion or some other transparent medium containing bromide or other salt of silver, and then to make the prepared plate one side of a cell or trough with the sensitive film turned inwards, and the cell so produced is then filled up with pure mercury. In this way a brilliant surface is in optical contact with the sensitive film, and after due exposure, the plate is developed with pyrogallic acid and fixed with the usual hyposulphite of soda solution, when a faintly coloured image resulted. I have tried the effect of exposing a bichromatised gelatine plate under a number of strips of different coloured glass to bright sun-light, but obtained no pronounced results; no doubt because I omitted the indispensable reflecting surface, as I find Lippmann has tried the same experiment with the addition of a reflecting surface, and has thus obtained his best and latest results.

Considering the large number of persons who from various causes practice what has been facetiously called the "black art," it seems almost impossible but that there must be a goodly number present who have had a certain amount of scientific training in chemistry and physics, and a knowledge of these subjects is an immense help no less to the beginner than to the advanced worker. I cordially invite all who have had that training and who happen to be present, to attach yourselves to the Club, and then, not only give the members the benefit of your superior knowledge, but to contribute your mite to the further development and ultimate success of our scheme for the establishment of the Society on a sound scientific basis. Let not beginners be frightened away by the projected programme. All must have a beginning, and failures frequently teach us more than our successes. I trust that this Exhibition will be the means of causing a large accession of members, for it is not to be forgotten that photography is not only one of the most fascinating and absorbing hobbies that it is possible to take up, but that it requires for its successful accomplishment patience, care, neatness, cleanliness, precision, and close observation, combined with thoughtfulness, and so directly tends to develop those qualities which are absolutely necessary if we would make life a success.

* A portion of the Presidential Address at the opening of the Brixton Camera Club Exhibition, November 17th, 1892.

Affiliation of Photographic Societies.—Meeting of delegates, November 26th, Mr. W. Bedford in the chair. The report of the committee on technical lectures was read, to the effect that photogravure seemed the most suitable subject; the members of the committee stated that they had approached the P. S. of G. B., who had given them a favourable reply, and that they were in communication with a probable lecturer. The report was adopted. To carry the proposed lectures into effect it was proposed by Mr. Cox (North Middlesex P. S.), seconded by Mr. Clifton (Photographic Club), and carried, that a committee, to consist of Messrs. Everitt, Hodsoll, and Marchant, be appointed to elect a lecturer, and to report upon the best method of carrying out the scheme. A letter from the Southsea Photographic Society was read, suggesting:—(1) A means of circulating for fixed periods the more expensive works of reference on photography, amongst the societies; (2) That albums should be collected and circulated, illustrative of the best work of the various societies; (3) That sets of slides should invariably be accompanied by readings. With reference to the first proposal, which was that the committee should subscribe to some library where the works were to be found, it was pointed out that no such lending library existed that the delegates present were aware of, and that the formation of a circulating library would be impossible in the present state of the funds at their disposal.

(Letters to the Editor, continued from page 424.)

WATKINS' EXPOSURE METER.

Sir,—During the correspondence which took place a few months back regarding the actinograph, Mr. Watkins was good enough to forward me one of his exposure meters for trial.

Having used several instruments of this kind, and found them more or less worthless, I was quite prepared to find fault with it, but after an extended trial on every kind of subject, I am of opinion that the instrument fulfils every condition claimed for it by the inventor in his printed description.

The photographic conditions during the most favourable part of the day in the summer months (when most amateur work is done) will be found tolerably uniform, and with very little experience the correct exposure for ordinary well-lighted subjects may be correctly judged without any instrument at all. The too familiar certificate of an inexperienced photographer who succeeded in exposing a couple of dozen plates consecutively, with the aid of an instrument, without the loss of a plate, is not therefore so greatly in favour of the instrument as might at first sight appear. It is in timing exposures for interiors and out-door subjects under heavy foliage, that some kind of guide to the exposure is required. For such subjects Watkins' instrument is invaluable, as it shows the value of the light which actually reaches the objects to be photographed, and the only point left to the photographer's judgment is the colour value of the objects, which is a very simple matter if Mr. Watkins' instructions are attended to. Two objections have been made as to the efficiency of this and similar instruments; first, that the darkening by light of the gelatino-bromide paper has no constant ratio to the formation of the invisible image on a gelatino-bromide plate. After repeated trials with the instrument, I can find no ground for this objection. The second objection is, that the light may change after the exposure has been calculated by means of the instrument, or even while the plate is undergoing exposure. This objection applies to all instruments for calculating exposures, because the calculation must in all cases be made previous to exposure.—Yours truly,

W. L. Noverre (Colonel).

* * * *

THE SPEED OF PLATES.

Sir,—In justice to ourselves we should like to refer more fully to the correspondence that you published last week under the above heading.

The plates, of which we advertised the rapidity, were tested, not by *us*, but by a competent, independent gentleman, Mr. Alfred Watkins.

The sensitiveness reported to us was 150 "on Watkins' scale," and we considered we were quoting an accepted published ratio, in stating that "150 Watkins' scale" equalled 100 on Hurter and Driffield's.

So soon as Messrs. Hurter and Driffield raised any doubt as to the accuracy of the figures on their scale, we immediately withdrew their name from our advertisements, being quite content to accept the reading of the "Watkins' scale" alone, especially when given by such a *practical* expert as Mr. Watkins.

We do not care to adopt the Hurter and Driffield actinograph until it is recognised as being a standard instrument by the Photographic Society of Great Britain, or by a suitable body of scientific men capable of deciding its merits. The mere fact of its being adopted by one or two plate makers has no influence with us whatever. Meanwhile we are satisfied to have our plates tried by the Watkins method, being the *only one* based on an actual camera test, we estimating that 999 plates out of 1,000 *are* used in the camera.

The whole question of branding the sensitiveness of plates on each packet is a most serious one, both to the manufacturer and the trade. As manufacturers we have nothing to fear in the future in respect to rapidity if we branded our plates, but the interests of the trade must be considered.

The system of branding plates adopted by manufacturers using Hurter and Driffield's actinograph may be fair to the purchasers, but are most unjust to the trade (both wholesale and retail) that *stock* their plates. Our plates, if *branded* this week "100" Hurter and Driffield, would be at a heavy discount (practically, dead stock) if we were to issue 125 next week. Who ought to bear such a loss? Surely not the trade, who stocked our goods on our representations of only a week since.

Our company will not adopt any system of branding plates that is deterimental to the trade's interests. When it can be clearly shown that the branding of plates would be advantageous to the trade we shall be only too pleased to adopt their views.—Yours, etc., The Imperial Dry Plate Co., Ld.

(T. E. H. Bullen, Secretary.)

Cricklewood, N.W., Dec. 5th, 1892.

* * * *

A CORRECTION.

Sir,—I beg to draw attention to an obvious error in the report of a paper on "Multiple Coated Plates," read by me before the West Kent Photo. Society, in which I am made to say, "that for ordinary work where the correct exposure is known. . . the Sandell plate shows great and invaluable superiority," etc., etc.

As this is exactly the reverse of what I did say, I trust that you will be able to find space either for the insertion of this letter or for the correction of your notice.—I am, etc.,

Gregor Grant.

* * * *

"AMUSING THE ORPHANS."

Sir,—Kindly allow me to thank those of your warm-hearted Scotch readers who responded to my appeal for magic-lantern slides.

We have children here from Scotland, Ireland, Wales, and the Isle of Man, although the majority are of English parentage.

Cannot I persuade some more of the subscribers to the Amateur Photographer to afford me the pleasure of thanking them? I will send them a little pamphlet containing information about the Home with illustrations copied from photos.

I beg of them to look through their photographic paraphernalia, and see if they cannot make their own Christmastide happier by helping to make those happy who have no holidays from the Home, from the time they enter it at eight until they leave at fifteen years of age.

Craving pardon for encroachment on your space, I am, etc.,

A. Mitchell (Head Master).

R. A. O. A., Camberley, Surrey.

* * * *

LANTERN-SLIDES OF LIFE AND CHARACTER.

Sir,—I am desirous of obtaining studies and life and character in all parts of the world, and although I know it is a tall order, yet I venture to utilise your columns (with your kind permission) to make known my yearning desire. First, however, I don't want something for nothing, but for every slide sent me an equivalent will be given. My offer is to give slide for slide.

Any of your readers who may be in possession of hand-camera studies of street life, native characters or scenes, which will illustrate the life of the particular country, I should be glad to hear from.

I will exchange any number (not exceeding eighteen) slides of English street life and character for a corresponding number from a foreign or colonial fellow worker. Although hand-camera shots would be preferred as giving better renderings of life, yet I by no means wish the series thus limited. My object is to form a set of slides of an interesting and instructive nature which will be ready by next season. I should be glad to hear from any one in this country as well who may possess suitable slides taken by them on a holiday trip abroad.—Yours, etc.,

47, Hagley Road, Birmingham. Walter D. Welford.

* * * *

LANTERN SLIDES.

Sir,—In reference to the suggestion made by Messrs. Elliott and Son, and also to that of Mr. W. P. Craig in your issue of the 2nd inst., as to the reduction of contrast between the picture projected on the screen and the surrounding portion, I think you will agree with me that semi-transparent paper and the like would be useless for this purpose; and the painting suggested by Mr. W. P. Craig would be tedious, as well as requiring great care and skill in producing good results.

Now, I would suggest that a better effect could be obtained by photographically printing a mask of any desired shape or size around the view or subject.

This is easily accomplished in the following manner:—Having previously printed the required subject from a negative on to a lantern plate, either by contact or reduction through the camera, and masking that portion of the negative not to be included in

the finished slide, I then take a glass of quarter-plate or lantern size, and affix thereon and in the centre thereof a piece of opaque paper, cut to the size of the required aperture in the mask; placing this in the printing-frame, paper side uppermost, I place thereon (film side down) the already exposed lantern plate, so that the portion on which the view or subject has been printed is covered by this opaque mask. The remaining margin of the plate is then exposed to light, and the whole developed and fixed in the ordinary way; the result being a picture surrounded by a mask of any required density or colour, due to variations in exposure and development. This colour can still be further altered by "local toning," intensifying, etc. We have thus a mask, surrounding the image projected, equal to it in texture and beauty. Several modifications will suggest themselves, such as printing the mask on the cover glass, printing the title of the subject on the mask, so as to appear with the subject on the screen, etc.

I may mention, *en passant*, that I have made admirable focussing screens for use in focussing microscopic objects, reduced images, etc., by this procedure, viz, exposing a bromide, or preferably a chloride of silver plate to the action of light, and developing tentatively with a weak developer to a thin grey density and then fixing.

With such a screen and the use of a focussing glass, the image can be focussed to a nicety, the deposition of silver (on the screen) being so fine, and the grain does not show up with the magnifier, as is the case with the finest ground-glass.

I hope soon to contribute an article to your Lantern Screen on "Local Toning and the Colouring of Lantern Slides Chemically," being the outcome of a series of experiments conducted during the past few months.

Thanking you in anticipation for inserting these suggestions, I am, yours, etc., D. G. GORDON.

Apparatus.

THE TODD-FORRET MAGNESIUM FLASH-LAMP.

A. H. BAIRD, of 15, Lothian Street, Edinburgh, has sent us some specimen illustrations of work, interiors, taken by aid of the above flash-lamp, and they only confirm the good opinion we hold, based on experience of the capabilities of the same. In town during these dark days this lamp is of great value.

ACID FIXING SALT.

R. W. Greeff and Co., of 29, Mincing Lane, E.C., have sent us a sample of the above which they have placed upon the market.

One part of this salt dissolved in eight parts of water forms a clear acid fixing bath which prevents staining and frilling of the film, and the bath keeps its own colour far longer than the ordinary fixing bath. The salt dissolves easily and quickly, and should be of value to all who like clean fixing baths and clean films.

CADETT'S "LIGHTNING" PLATES.

Cadett and Neall, of Grevilie Works, Ashtead, have made yet another advance in the speed of their plates, and that without any sacrifice of quality. The new plates they have sent us register 130 on Hurter and Driffield's scale, and 195 on Watkins'. The possibilities of work that this increase opens up are, of course, almost unbounded, and should the speed still further increase, we shall soon expect some extraordinary revelations. Portraiture in ordinary sitting-rooms will become an everyday occurrence, and the far-famed story of the detective who took a negative of a burglar with a hand-camera in a London slum will be a reasonable possibility even if not *un fait accompli*.

Reviews.

Photo-Mechanical Processes. By W. T. Wilkinson. Published by Hampton, Judd, and Co., 13, Cursitor Street, E.C.

Himself a practical worker, Mr. Wilkinson has long been known as a practical writer on the text of this book, which includes photo-zincography in line and half-tone, photo-litho and collotype. We can recommend this book as extremely useful to all desirous of entering into these branches of photography, but we regret that in some cases it is not more complete and full. As an instance of this, we note that the preparation of half-tone blocks on copper, a process which certainly gives the finest results, is dismissed in three lines. And we find no mention, or one equally as brief, as to using metal plates for collotype.

Manuel de Chimie Photographique. By Maumené. Published by Société d'Editions Scientifiques, 4, Rue Antoine-Dubois, Paris. Price 5fr.

This manual of 500 pages is not a work which will be taken up by the dilettante or dabbler, but to the student it will be of very great value. Each chemical used in photography is treated of at length, its preparation and uses, and considerable valuable information is collected together.

Concerning Mountants.

BY CHARLES MACLAURIN.

A GOOD mountant is such an important and useful thing that no excuse is needed for devoting a special article to it. I shall try to be both clear and concise in what I have to say, for nobody ever reads a long, sham-scientific-style sort of article—at least, such is my experience.

One hears a great deal about various mountants—glue, gelatine, arrowroot, and so forth—but my own experience is that nothing comes up to our old friend starch. Clean, inexpensive, not injurious to the print, easily kept, easily made, and easily applied, it is undoubtedly one of the best mountants we possess; but it must be *good* starch. I think it is because most people get the cook to make their starch for them that it has fallen into such disrepute. That estimable female never bothers her head about such a little point as crushing it up properly; it is really a matter of supreme indifference to her whether it sticks or not. Now, there is one way to make starch, and one way only. Get a cup, and put into it about a tea-spoonful of starch, and mix with cold water till it is about the consistency of cream. Pound the starch very fine, leaving no lump big enough to see. Then pour on boiling water—really boiling, mind—till it forms an emulsion, and the starch is made. If it is too thick—which is not likely, by the way—add more hot water.

You must add some antiseptic to waylay the *bacterium termo*, or your starch will only keep a few days. There are many such—methylated spirit, alcohol, corrosive sublimate, carbolic acid, oil of cloves, and boracic acid are the most useful.

Methylated spirit used to be my favourite. I used to add it after the starch was made, having purposely made the latter too thick, and thin it down with spirit. However, the new Excise regulations have turned methylated spirit into such a fearful compound of filth that I am really afraid to trust a delicate print to its tender mercies.

Alcohol is an excellent antiseptic, but is expensive. Use it in the same way as methylated spirit. Whiskey will not do—even Irish, which Scotchmen consider the nearest approach to prussic acid that there is, I believe.

Corrosive sublimate (1 in 1,000 solution) and carbolic acid (1 in 20) are, of course, *facile princeps* among antiseptics; but as they are sold under the Poisons Act the non-medical reader will have difficulty in getting them. Both are most virulent poisons; the corrosive being poisonous both when it gets into the blood by a scratch or wound and when it is swallowed, so they should not be left about if the reader gets hold of them. Strong carbolic acid may be applied after the starch is made, while it is still warm. Twenty or thirty minims of it will keep four ounces of starch till Doomsday, if it is well shaken up. But be careful what you do with these fearful poisons.

Oil of cloves is an excellent preservative. However, I do not care for the smell of it myself, so I have little practical experience of it. I believe a tea-spoonful of the oil to four ounces of starch is sufficient.

And now we come to my own favourite, boracic acid. It is cheap, fourpence an ounce, which will do for quarts of starch — not poisonous, and very efficacious. In addition, a solution of it at 100 deg. F. is the very best thing you can get for sore eyes.

To make starch with it, put a little into the first water you use; boil it till it dissolves, for it dissolves very slowly in cold water. Then mix up the starch thoroughly with it, and proceed as before. About a tea-spoonful of the crystals will keep four ounces of starch indefinitely.

By the way, a solution of boracic acid is a useful thing to have about the house. If a dog bites you, or a cat scratches your hand, one should always wash the wound both in hot water and some antiseptic, such as boracic or Condy's fluid, to prevent blood-poisoning, for one never knows what putrid matter the animal may have been

ILFORD

BROMIDE OPALS.

Reduced Prices

$4\frac{1}{4}$	by	$3\frac{1}{4}$	-	1/6
5	,,	4	-	2/6
$6\frac{1}{2}$	,,	$4\frac{3}{4}$	-	3/8
$8\frac{1}{2}$	,,	$6\frac{1}{2}$	-	6/6
10	,,	8	-	10/-
12	,,	10	-	16/-
15	,,	12	-	24/-

Per doz.

Britannia Works Company, Ld.,

ILFORD, LONDON, E.

☞ "I'll to my books."—Shakspeare.

PERCY LUND and CO.'S PUBLICATIONS

Can be obtained from any Photographic Dealer at Published Price.

Xmas Annual of the "Practical Photographer."

This new and unique production consists of an artistic large quarto portfolio, containing eight choice studies, reproduced from photographs, and printed on antique plate-sunk cards. A leaflet with a short description of each of the studies is included. These pictures adapt themselves either for framing or for a place on the drawing-room table. The Annual would form a most appropriate Christmas present. Price 1s., post free 1s. 3d.

The studies are by the following artists: Harold Baker, S. N. Bhedwar, W. J. Byrne, Thomas Scotton, F. M. Sutcliffe, W. Ethelbert Henry, Richard Keene, Robert Slingsby.

☞ As the edition is positively limited to 2,000 copies, orders should be placed at once to avoid disappointment.

The Xmas Double Number of "The Practical Photographer"

Forty pages of matter. Twenty Illustrations in the text. Six magnificent supplement illustrations in colours. Principal contents:—Artistic Printing, by Valentine Blanchard—Sport without Bloodshed, by Y. Wyddfa—Photographic Travellers, No. 6, H. M. Corthwaite—Opal Bromide Plates, etc., etc. "The Double Number of 'The Practical Photographer' marks an era in Photographic Journalism." Price 2d., post free 3½d. Annual Subscription, 2s. 9d., post free.

The Volume of "The Practical Photographer" for 1892.

Bound in neat red cloth, gilt lettered, over 330 pages, more than 200 illustrations. Superior toned paper, 2s. 6d.; post free, 2s. 10½d. A practical 'Xmas present.



Specimen of Illustrations in "The Practical Photographer."

The whole stock just purchased from Mr. J. WERGE. Reduced from 5s. to 3s. 6d.

The Evolution of Photography.

By JOHN WERGE. With a Chronological Record of Discoveries, Inventions, etc. Contributions to Photographic Literature, and Personal Reminiscences extending over forty years. Illustrated with ten collotype portraits. Neatly bound cloth. 312 pages. 3s. 6d.; post free, 3s. 9d.

"The book is full of interest, even for the general reader."—*Graphic.*

THE AMATEUR'S FIRST HANDBOOK OF PHOTOGRAPHY. A Complete Guide and Instructor in the Art of Modern Photography. The sixth edition contains much additional matter and a charming photo-process illustration. 6th edition. 14th to 19th thousand. Price 6d.; post free, 7d.

"The fact that it has run through so many editions speaks for itself as to the value of the book."—*Photography.*

BROMIDE PAPER. Instructions for Contact Printing and Enlarging. By Dr. E. A. JUST. Translated by Walter E. Woodbury and H. Snowden Ward. With bromide paper frontispiece and upwards of 30 illustrations in the text. Demy 8vo, price 1s.; post free, 1s. 3d.

"It is perhaps the most exhaustive monograph on the subject yet issued, no detail connected with bromide printing and enlarging being omitted."—*British Journal of Photography.*

THE PRACTICAL PHOTOGRAPHER'S LABEL BOOK. With antidote for each poisonous chemical clearly printed on the label. Labels varnished, rendering them practically impervious. The perforating is such that any label can be removed without disturbing any of the others. The most unique label book ever published. 6d.; post free, 7d.

"This is certainly the best label book which has yet been issued."—*Amateur Photographer.*

"A distinct advance upon what has been done before in this direction."—*Photographic News.*

PHOTO-MECHANICAL PROCESSES. By W. T. WILKINSON. The well-known standard handbook of the photo processes. Revised up to date and partially re-written. Full practical instructions in photo-zincography in line, photo-zincography in half-tone, photo-lithography in line, collotype. 148 pages, 8vo, stiff cloth. Price 5s.; post free, 5s. 5d.

SPECIAL NOTICE.

We supply the Trade with our own Publications and those of other firms on the best terms, Parcels of Weeklies, Monthlies, etc., made up and forwarded without charge for collecting or packing.

Publishing, Wholesale and Export Bookselling Warehouse:

MEMORIAL HALL, LONDON.

Printing Works and Chief Offices:

16, 18, & 20, ST. JOHN STREET, BRADFORD.

feeding on. Even the harmless necessary cut finger should be treated antiseptically. Not long ago a young friend of mine was seriously ill of blood-poisoning from neglecting a simple scratch of a penknife. Boracic acid is as good as anything for this. It is also useful for rinsing out the mouth with ; if every one rinsed his mouth out with boracic twice a day—a thorough rinse, of course—the dentists would not have much work to do.

Well, I have wandered from my original subject ; but the few hints above are certain to be useful to some one or other. They have often enough been useful to myself.

Exhibitions.

Society.	Entries close.	Opens.	Closes.	Address of Secretary.
Camera Club	—	Oct. 17	Dec. 8	G. Davison, The Camera Club, Charing Cross Road, W.C.
Cornish Camera Club ..	—	Dec. 5	Dec. 10	H. Tonkin, 22, Market Place, Penzance.
Phot. Soc. India	—	Dec.	—	Calcutta.
Phot. Soc., Ireland	—	Dec. 9	—	J. H. Hargrave, B.A., etc., 3, Newtownsmith, Kingetown, Dublin.
		1893.		
West London	—	Jan. 10	—	Lionel C. Bennett, 30, Blandford Road, Bedford Park, W.
Louth	—	Jan. 26	—	S. Francis Clarke, L.D.S., 8, Upgate, Loutb.
Holborn	—	Feb. 18	Feb. 26	F. J. Cobb, 3, Albion Grove, Barnebury, N.
Fillebrook Atheneum ..	Feb. 21	Mar. 1	Mar 2	J. W. Spurgeon, 1, Drayton Villas, Leytonstone.
Philadelphia (U.S.A.) Phot Society	Mar. 15	April 17	April 29	Robt. S. Redfield, chairman, Exhibition Com. 1,601, Callowhill St. Philadelphia, U.S.A.,

Societies' Notes.

Messrs. White and Burroughs in consequence of pressure of business being unable to devote sufficient time to the somewhat arduous duties of Honorary Secretary and Hon. Assistant Secretary of Croydon Camera Club, their duties have *pro tem.* been undertaken by Mr. J. Packham, of 17 Katherine Street, and Mr. A. Hirst, of West Croydon, to whom for the future all official communications should be sent.

The Guildford Photographic Society have opened a reading-room at 36, High Street, where many of the photographic papers besides the ordinary magazines are to be seen.

As is probably well known, Plymouth has been selected as the locality for next year's Convention, and the Devon and Cornwall Camera, as the issuers of the invitation, hope to secure the co-operation of the townspeople and of all the clubs in the locality, to the extent, at least, of a large accession of members to the Convention.

Societies' Meetings.

Aston.—A meeting was held on the 1st inst. There was a large attendance, and the chair was taken by Mr. Tylar (Vice-President). The chief business was the formulation of rules, and the arrangement of programme, the first issue of which will be ready early in the New Year; several really instructive items have been arranged, suitable to the requirements of a society of its kind, and much useful work is anticipated by the members, who are entering into the affair with zeal. Ladies and gentlemen wishing to become members should please communicate with Frederick W. Pilditch, Hon. Sec., 133, Wells Street, Aston.

Birmingham (Photographers' Union).—A meeting was held on 26th ult. Mr. Prince (President) occupied the chair. A magic lantern demonstration on members' lantern slides was given with great success, and much appreciated by the members and visitors present. Three new members were enrolled. On December 9th inst. a paper will be read by Mr. P. H. Foster, on "The Application of Elementary Art Principles to Photography."

Burnley.—At the meeting on the 30th ult., Mr. John Butterworth, J.P., presided, and there was a large attendance. Mr. B. Wollaston, of the Platinotype Company, gave a most interesting address, accompanied with experiments, bearing upon the development of platinotype prints. He showed how various tints up to sepia might be obtained, and also how the development might be retarded by the use of glycerine.

Cardiff.—A first-class set of slides illustrating hand-camera work were passed through the lantern on Friday evening. The series comprised scenes in the Rhondda colliery districts, Barry Dock, and street-life in the East-end of London. The photographs were all taken personally by the lecturer, the Rev. A. T. Fryer, and formed the basis of a most instructive and interesting discussion. The lantern was ably manipulated by Mr. S. W. Allen. The following gentlemen were elected ordinary members of the society :—Rev. H. R. John, Mr. Benjamin Evans.

City of London College.—On 30th ult. lantern evening. Slides by Messrs. Fell, Thirkettle, Adams, Lawless, and Cook were passed through the lantern, including slides of locomotives of many of our railways, slides from negatives taken during the society's outings last summer, and a portion of a set illustrative of river mining in California. Prints from the negatives of the latter were handed round by Mr. A. W. Cook, and prints of scenes in Switzerland by Mr. Goudey.

Croydon (Camera Club).—On 5th inst., the President, Mr. H. Maclean, F.G.S., in the chair, Mr. W. H. Smith demonstrated in very complete fashion the valuable power available in platinotype printing by the employment of glycerine in conjunction with the usual potassic oxalate developer, whereby some portions of a print may be more quickly developed than other parts. The use of the oxy-magnesium lamp for printing was also shown.

Croydon (Microscopical and National History Club, Photographic Section).—Ordinary meeting on 2nd inst., Mr. W. Budgen in the chair. Subject, "Blocking-out and Printing-in." The chairman, after introducing the subject, passed round a set of prints illustrating the various difficulties encountered when printing-in clouds, etc. Various methods were then described, showing how they might be overcome by the judicious use of tissue paper and masks, or by painting with oil colours on the back of the negative. The addition of figures to a landscape on albumen paper did not present any special difficulty if the figures were first printed and then, after they had been carefully painted over with Indian ink, the landscape printed. When gelatine paper was used, a mixture of gamboge with turpentine, or other medium which did not affect the gelatine, was suggested in place of Indian ink. Those who wished to refresh themselves on the subject were referred to a series of articles by Mr. V. Blanchard, on "Artistic Printing, or what to do with the Negative," now appearing in the *Practical Photographer*.

Darlington.—Meeting was held on 30th ult., when the lantern slides of Teesdale scenery, made by the members of the "Teesdale survey" set, were exhibited on the screen by means of the new lantern. For the benefit of the less experienced members, as each slide was shown each maker explained the process he had adopted in its production. Two new members were elected.

Derby.—On 30th ult. there was a very large and evidently interested audience at the St. James's Hall, when Captain Abney, President of the society, read a paper on "Hand-Cameras and Shutters." Mr. R. Keene presided, and Captain Abney, in the course of his address, threw out many useful hints for the guidance of photographers, explaining in a concise and lucid manner the intricacies of the hand-camera and its appurtenances. The better to explain his subject the lecturer illustrated his remarks with a variety of diagrams and photographs shown on a sheet by the aid of a powerful oxy-hydrogen lantern. The paper was followed with the keenest interest and attention throughout.

Devon and Cornwall.—At the fortnightly meeting held on the 28th ult. the Indian and Colonial set of lantern-slides, circulated under the P. S. G. B. affiliation scheme, was exhibited. There was a good attendance of members, the President, Colonel Barrington Baker, being in the chair. In addition to the above set, several members exhibited, and some very good work was shown on the screen. At the next meeting the subject will be "Developing and Developers," and demonstrations are being arranged to exhibit the properties of pyro, hydroquinone, eikonogen, Rodinal, and Amidol. It is also hoped that the series of slides entitled "Places to be Visited by the Photographic Convention of 1893" will then be ready and be exhibited prior to being sent on its travels among the societies.

Hackney.—The weekly meeting held on 27th ult. was under the chairmanship of Mr. W. L. Barker. It was decided to hold a smoking concert on January 3rd at the Club premises. Mr Roofe showed a P.O.P. (Ilford) print which had been in the frame three weeks but was not stained in any way. Mr. Beckett showed two prints, one on platinotype paper and the other on silver paper. Both had been kept in a very damp place. The platinotype print, however, was perfect, whilst the silver print had faded considerably Mr. Wire and Mr. Houghton both showed flashlight pictures. M.

Cross showed some negatives, and asked what was the matter with them. Mr. S. Beckett was of the opinion they were under-exposed and out of focus. Other work was shown by Messrs. Nunn, Moore, Sodeau, etc. Mr. Jno. Reynolds exhibited an Anschutz Tachyscope, which was on the principle of a wheel of life. Mr. Funston asked how permanganate of potash is used as an intensifier as per Wall's "Dictionary." Mr. Beckett thought it stained the negative, and thus gave more printing quality. Mr. Sodeau, however, said there was a distinct chemical action. From the question box: "What constitutes a hand-camera picture?" Considerable discussion ensued on this question, in which nearly all took part. The Hon. Secretary gave the ruling of the judges at the recent exhibition, which was, "Any camera held in the hand is a hand-camera." A vote taken on the question resulted in the following being the accepted answer:—"A hand-camera must be held in the hand only, and not on any kind of support. Instantaneity is not essential, the natural limit being a question of how long it can be held as mentioned. If placed on a stand or any other support it is no longer a hand-camera. Size is immaterial." Mr. R. Beckett said he was of opinion that the composition should also be done on the finder. The Hon. Secretary stated that next meeting would be a lantern night.

Guildford.—The first lantern evening was held on the 29th ult. Mr. A. E. Moon, the hon. lanternist, threw on the screen views of Wales and a set of views illustrating English and foreign cathedrals. After these were shown slides made by members of the society, Messrs. J. Russell, A. E. Moon, A. J. Moon, A. W. Bullen, J. H. Nunn, and others, which were greatly appreciated by the members and friends present.

Harlesden-Willesden.—The first lantern evening was held on 29th ult. A large number of slides were shown, being records of members' excursions, snap-shots, etc. A public lantern and musical entertainment was decided upon, the arrangement being left in the hands of the council.

Herefordshire.—An ordinary meeting was held on the 1st inst. Mr. Alfred Watkins being in the chair. The 1892 Prize Slides kindly, lent by a contemporary were exhibited, and much appreciated, especially the work of Mr. S. F. Clarke, of Louth. A discussion as to the judging of members' slides sent in competition resulted in the appointment of three non-competing members as judges, the award to be made at a special meeting on the 13th inst. The next ordinary meeting is to be held on January 3rd; subject, "A Caravan Tour Through Wales," illustrated by slides by Messrs. Edwards and Gethen; an exhibition of work of members will also be held at the same time.

Holborn. — On 2nd inst., Mr. Fred Brocas in the chair, Mr. F. J. Cobb gave an interesting demonstration on the use of the optical lantern. Last Saturday the annual supper of the Holborn Camera Club took place at Anderton's Hotel, Fleet Street. Mr. A. Horsley Hinton, the President of the Club, took the chair.

Kensington and Bayswater.—A meeting was held, Mr. S. C. Mote presiding. Three questions from the question box were read and discussed. The first was in reference to the exposure required for snow pictures; the second, as to whether it was possible that a faulty developer should produce a partial reversal of the image, as one of the members had a batch of negatives showing partial reversal, and he knew that the exposure was about correct. The President stated that if, by accident, any thio-carbonide got into the developer it would cause immediate reversal. The next question referred to enlarging from films. One of the members found that when he placed his film in the enlarging lantern it crinkled and became useless, even though he adopted the plan of tightly pressing the film between two pieces of plain glass. It was suggested that this might have been caused by the films not being *perfectly* dry. About ninety slides by the members were exhibited by the hon. lanternist.

Leeds.—The annual meeting was held on the 1st inst., Dr. Jacob in the chair. The annual report was read and adopted; it shows the present membership to be 105. The property of the society in appliances, furniture, and books is now considerable; the bookcase contains nearly all the best works published. A large number of them were presented recently by Mr. Wain Brown, Hon. Librarian. The following gentlemen were elected as Committee for the ensuing year: Messrs. E. H. Jacob, M.A., M.D., B. A. Burrell, F.I.C., Godfrey Bingley, T. W. Thornton, S. A. Warburton, Herbert Denison, Robert Steele, J. H. Walker, H. P. Atkinson, and T. Butterworth. Mr. Godfrey Bingley afterwards gave a lecture entitled "Wanderings with a Camera in 1892," illustrated by lantern slides of the views he had taken. They were much admired, and the large amount of information he gave, historical and descriptive, was much appreciated. A synopsis of the ground covered is almost all that may be given. Starting at Leeds, he showed some very good views of the interior of the Leeds Municipal Art Gallery during the time of the photographic exhibition last January, then views in Yorkshire, the borders of Lancashire and Westmoreland, then far down to Hampshire, Dorsetshire, Oxfordshire, Wiltshire, Bucks, and Herts, and a few of the adjoining counties, then amongst the picturesque scenery of North Wales. Some interiors were shown almost free from halation, which he said were done on Eastman's thin films; he could not get them so on the thicker films. Developer used for the slides was eiko. and hydro. combined.

Lewes.—The members and friends who assembled on 2nd inst. in expectation of seeing the hand-camera prize prints of a contemporary were doomed to disappointment, as, owing to some cause at present unexplained, they did not reach Lewes until Saturday night. Fortunately, however, Mr. Foxall had brought a number of first-rate lantern-slides, and these were put through the lantern and much enjoyed by all present. Great interest was shown in a large selection of mounts for Christmas cards and ordinary prints sent by Messrs. Hannam and Co., Soho Square, London, and Gainsboro', and they were generally commended both for their artistic merit and their cheapness.

Leytonstone.—On 3rd inst. Mr. Tom Symmons in the chair. Discussion, "Photographic Dodging." Opened by Messrs. H. H. Summers and F. W. Wates. Mr. Summers commenced his paper on the bugbear "Halation:" after describing the various causes, went on to the remedies, advocating backing the plate with vandyke brown in a creamy paste with water and a little glycerine; he also found if only present in a small degree it could often be removed from the negative with methylated spirit, applied with a piece of chamois leather. The great care that the inside of the bellows should be dead black was next gone into, he explaining that that was frequently the cause of bad negatives, particularly when using a lens of greater covering power than the plate exposed. He also mentioned the advantages of using the front or back combination of a rectilinear lens, which would be found about double the focal length of the doublet, and how often the extension of the bellows did not permit the opportunity of using it, and showed how he overcame the difficulty by having a piece of brass tubing made to extend the barrel of the lens when using the front combination. Mr. Wates here took up the parable, and went on to the question of improving or dodging negatives by means of intensification and reduction, demonstrating by means of Dr. Monkhoven's formula. He next described the means of ascertaining that the plate was in correct register with the focussing screen. The means of detecting the presence of actinic light in the dark-room. Dark slides and camera were next touched upon. How to test the focal length of any lens, and the value of any stops was next explained, and also showed a very simple view metre, and went into the different methods of vignetting, advocating tracing the outline with tissue paper, cutting out the shape on card, serrating the edge, fastening on the printing frame and packing underneath with cotton wool, and pulling the wool out into fine shreds gave a very soft vignette, and also gave a ready means of at once slightly altering the shape if necessary when printing. Blocking skies and other printing dodges were next described. Discussion followed, in which Dr. W. P. Turner, Messrs. Tom Symmons, H. E. Farmer, Leaper, J. Proctor, and A. E. Bailey (Hon. Sec.) took part. A vote of thanks to the lecturers and Chairman brought a very pleasant evening to a close. Five gentlemen were put to the vote and elected, making up the muster roll to 123. The first annual dinner takes place on the 10th inst.

Liverpool (Y.M.C.A.)— On 30th ult. Mr. F. B. Illingworth, Hon. Secretary of the Liverpool Photographic Society, gave a demonstration on the art of "Aniline Printing." The demonstration was in every way a success, and the lecturer illustrated his remarks with experiments in a very able and lucid manner. Mr. J. F. Stone presided.

Maidstone.—On the 1st inst. Mr. Andrew Pringle gave an address to the members on "Lantern-Slide Making." It embraced a thoughtful *resume* of the artistic aspect of the subject, later on turning to the scientific side of tonality and gradation. The various processes of slide-making were then discussed, and information given on the practical working of many points in reply to questions. Mr. Pringle concluded by specially emphasising the qualities of a good lantern slide, and spoke in favour of a medium tone, neither too cold nor warm, and the necessity for all the details of the shadows being clear and visible on the screen.

Margate.—A meeting was held on 29th ult., in Mr. Tweedie's spacious laboratory, 54, Hawley Square (kindly lent for the occasion), to witness a demonstration on "Lantern-slide Making," given by Mr. Tweedie. Having introduced his subject by suggesting the many uses to which lantern slides may be put, whether for educational, scientific, or recreative purposes, the lecturer not only advised those who took up lantern work, to choose a certain class of work, with a definite object in view, but also advised the use of *one* make of plate with *one* developer, rather than trying first one kind, then another, eventually becoming disappointed with results, and giving up the hobby altogether. He (Mr. Tweedie) had spent a deal of time and patience, with a variety of plates and developers, but had come to the conclusion that in his hands Ilford, Alpha, and Special with hydroquinone developer gave best results, but he did not wish to dissuade others from sticking to their favourite make, if they were

equally satisfied with their results, By way of demonstrating the process, he printed (by contact) one each of the plates, giving Special 20 seconds exposures to the flame of large fan gas-burner; and Alpha 1½ minutes, developing with hydroquinone, the results being a fine black in the former and a nice warm tone in the latter. Later on these were projected on the screen by means of an oxyhydrogen lantern, and again, after toning, to illustrate the effect of that part of the operation. A dense negative was next subjected to the reducing action of potass. ferricyanide with marked effect. The benches of the laboratory contained a large number of slides arranged in groups of different makes, and some of each were passed through the lantern to illustrate their merits, and invite discussion. The lecturer had produced a great variety of tones, which added greatly to the effect of the various subjects, and elicited well-merited applause. The meeting was well attended.

Newcaster—On the 28th ult. Mr. C. W. Hastings, of London, lectured on "Picture-making by Photography." Mr. J. P. Gibson presided, and there was a good attendance. In his preliminary remarks Mr. Hastings spoke of the fascination which the art of photography exercised over its votaries, and said it was the only hobby that had not gone out of fashion in the last fifty years. In the direction of picture-making, he emphasised the necessity of having a central idea, and spoke briefly of the subject, selection, composition, and light and shade in photographic pictures. The lecturer then displayed, by means of the lantern, a number of beautiful productions of Mr. H. P. Robinson.

Oxford University—A meeting was held on 28th ult. Mr. J. L. Myres, B.A., Magdalen, gave a most interesting exhibition of his Greek slides, and amply showed that slides accompanied by a study into the subjects they represent can make a lecture doubly interesting. The following new officers were elected for next term: Assistant Secretary, Hon. G. L. Parsons, Balliol; for a vacant place on the Committee, Mr. E. F. Glynn, Merton.

St. Bartholomew's Hospital.—The first ordinary general meeting of this year, was held on 30th ult., Dr. Russell presiding. Mr. W. J. Armitage read an interesting and instructive paper on "Daylight Enlargements," in which he carefully explained the details of the making of enlargements by the use of an ordinary camera. After the paper there was an exhibition of prints and lantern slides by members of the society.

West Kent.—Ordinary meeting on 3rd inst. Mr. Dresser gave a lecture on "Amidol and its Uses." The lecturer said that he found the developer very good for negatives, bromide paper, and lantern plates, it behaving exceedingly well with bromide paper, printing and enlarging from very dense negatives. The developing formula sent out by makers, he soon gave up, it very soon turning colour. And after making several experiments he struck upon the formula which worked well: Amidol, 1 oz.; meta-bisulphite potassium, 1 oz.; water, 10 oz. To use with this Mr. Dresser makes up a saturated solution of washing soda, saturated solution carbonate of potass, and 10 per cent. solution bromide of potassium. He recommended a start with developer as follows for plates, normal exposure:—Amidol, 1 drm., saturated solution washing soda, 1 drm.; water, 1 oz.; and two drops 10 per cent. solution of bromide. This will also answer well for lantern plates. For extra density add a few drops carbonate of potass solution as required. Formula for bromide papers: Amidol solution, 6 drm.; carbonate of potass solution, 6 drm.; water, 10 oz.; 10 per cent. solution bromide, 30 drops. The lecturer recommended a trial of this developer, and handed round some prints and slides which he had obtained with good results.

West Surrey (Photographic Society).—Usual fortnightly meeting held on 30th ult., Mr. James in the chair. The subject of the evening was a demonstration of the uses of Cresco-Fylma, by Messrs. Hill Bros., of Surbiton. What these gentlemen claim for their production is chiefly confined to its effect upon a film in the way of enlarging. As a means of enlarging without the inconvenience of the dark-room it is certainly invaluable. The mode of procedure, as described by Messrs. Hill, is as follows:—The negative is immersed in a diluted solution of their mixture (3 parts of concentrated solution to 1 of water) In a very short time the film leaves the glass support. After this takes place it should be left in the solution for about two minutes, and then, supported by the glass it has just left, the free film is transferred to another dish containing simply water, then the enlarging commences, and in about fifteen minutes it has reached its maximum growth of about twice its original size. The film is then floated on to its support, whether glass, porcelain, or paper it matters not, the air-bells blown from under the film and then allowed to dry; after drying, it is necessary to wash the film as in an ordinary negative or transparency. The enlarged film shows no signs whatever of distortion nor loss of sharpness. In cases where the pyro-ammonia developer had been used, enlargement took place less readily and did not proceed so far. It was also pointed out by Messrs. Hill, that if the subject is badly placed upon the plate it may be slightly enlarged and shifted on *the same plate*. Messrs. Hill Bros. then passed round a number of specimen enlargements. A discussion then took place, when it was pointed out that the patentees seemed to have given their attention only to the enlarging properties of their solution and had neglected the fact that they could procure a perfectly uninjured free film, which fact alone should make their article invaluable. Again, workers of the carbon process will find this solution a great boon, inasmuch as the tedious and uncertain double transfer process can be made as simple and as certain as the single transfer. All that is needed is to float the film of the negative in a very *dilute* solution of Cresco to *avoid* enlarging, and then reverse the film on to another glass. When printed, the result would of course be the same as if finished by the double transfer process.

Wigan.—On 1st inst. Mr. J. H. Atherton gave an interesting demonstration of the carbon process. After fully explaining the theory of the process, laying particular stress on the continuing action of light on the tissue, he proceeded to develop two prints, and finished them by the single transfer process, making one of them into an excellent lantern slide. Abundant opportunity was afforded the members of putting the fact of the tissue becoming insoluble after keeping an abnormal time to the test, as Mr. Atherton had brought a packet of tissue which he found to be quite insoluble when about to print specimens for his demonstration a fortnight ago, which demonstration had to be postponed accordingly. The only apparatus used by Mr. Atherton, beyond that necessary for other processes, was an actinograph for gauging the progress of printing, a small gas boiling stove, costing a shilling, and a tin kettle. Several questions were asked and satisfactorily answered by the lecturer, and the majority of those present expressed surprise at the simplicity of the process and beauty of results.

Woolwich (Polytechnic Society).—The ordinary meeting held on 28th ult, was set apart for a members' lantern night. Over a hundred and fifty slides by Messrs. Godfrey, Forsdyke, Cregan, Taylor, and Dawes were thrown on the screen, from which selections were made for the national lantern-slide competition. Next meeting December 12th.

SOCIETIES' FIXTURES.

Dec. 10.—LEYTONSTONE.—First Annual Dinner.
" 12.—ASHTON-UNDER-LYNE.—AMATEUR PHOTOGRAPHER 1892 Prize Slides.
" 12.—NORTH MIDDLESEX.—Technical Evening and Nomination of Officers.
" 12.—RICHMOND.—"Photographic Failures." Mr. C. H. Davis.
" 13.—CANTERBURY.—Competition: Enlargements.
" 13.—NEWCASTLE-ON-TYNE.—Monthly Meeting.
" 13.—BIRMINGHAM.—"Bromide Printing."
" 13.—WEST LONDON.—General Discussion on Photographic Subjects.
" 13.—P.S.G.B.—"Lens Testing at Kew," Major Darwin.
" 13.—EAST LONDON.—Ordinary Meeting.
" 13.—HACKNEY.—"Print-out Lantern Slides," Mr. W. E. Woodbury.
" 14.—LIVERPOOL (Y.M.C.A.)—"A Visit to the Water-lands of Netherland," Mr. E. M. Tunstall.
" 14.—THE PHOTO. CLUB.—Members' Open Night.
" 14.—BRECHIN.—Slides illustrating Linen Manufacture.
" 14.—STOCKPORT.—"Bromide Printing," Col. Turner, J.P.
" 14.—WAKEFIELD.—"Reduction."
" 14.—LIVERPOOL (Camera Club.)—"Lantern-Slides by Reduction from Half-plates," Demonstration, Mr. T. Edwards.
" 14.—PHOT. SOC. IRELAND.—"Developing Eastman Films," and Lantern Evening, Mr. A. M. Geddis.
" 14.—CROYDON (Microscopical).—"A Simple Method of Photo-Micrography," Mr. T. Charters White.
" 15.—OXFORD.—Indian and Colonial Slides.
" 15.—ELIZABETHAN.—"Rambles," Mr. T. E. Freshwater.
" 15.—LONDON AND PROVINCIAL.—Monthly Lantern Night.
" 16.—LEWISHAM.—The AMATEUR PHOTOGRAPHER 1892 Prize Slides.
" 16.—UTTOXETER.—"Platinum Printing Process," Mr. S. G. B. Wollaston.
" 16.—HOLBORN.—Lantern Night.
" 16.—CROYDON (Microscopical).—Society of Arts Loan Series of Chicago Slides.
" 17.—HULL.—Slide Exhibit and Social Evening.
" 17.—LEYTONSTONE.—Members' Lantern Evening.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5893. **Revolving Show Case.**—I am in want of something for showing my photographs on a stand or table, having heard that there are some which revolve and hold about a dozen views. Can anyone give me the address of a maker of this kind of thing, or any information?—NOVICE.

5894. **Negatives.**—Would a brother amateur kindly lend me negatives of the Riviera, Naples, and Venice to print lantern slides? The utmost care will be taken of them.—DUBLINO.

5895. **Bromide Enlargements.**—(1) Can any reader tell me about what exposure I should give to enlarge an ordinary quarter-plate negative to whole-plate in Lancaster's Multum-in-Parvo on A or B (Eastman's) bromide paper in daylight? (2) And will anyone tell me where I can get printing paper (blue or green, I believe) for printing moonlight effects?—J. R. COOKE.

5896. **Yellow Tinge in Platinotypes.**—In working with platinotype paper I find in the finished prints there is always a slight yellow tinge in the dark portions of the picture, although I use four, and sometimes five, bathe of hydrochloric acid. I use the cold-bath paper. If anyone could tell me the reason of this, and how to avoid it in future, I should be very grateful.—IGNORAMUS.

5897. **Camera Bellows.**—Would one of your readers tell me how to colour (black) a camera bellows that are a little shabby in appearance?—M. CHENEY.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Oct. 28th.—No. 5849.
Nov. 4th.—Nos. 5852, 5854.
,, 18th.—No. 5866.
,, 25th.—Nos. 5875, 5878, 5880, 5881, 5884.
Dec. 2nd.—Nos. 5886, 5890.

ANSWERS.

5887. **Ferrous Oxalate.**—The formula you want is—

Proto-sulphate of iron	1 lb.
Hot water	32 oz.
Acetic acid (or citric acid ½ oz.) ..	½ drm.

—FEN.

5888. **Sink.**—A strong lidless box the size you require, and about 6 in. deep, lined with sheet lead or zinc, and with a hole bored in the bottom to take a waste pipe, would suit your purpose; or get one of the ordinary zinc washing bowls and solder a waste pipe into a hole in the bottom.—PEN.

5888. **Sink.**—Get a whisky box, or any suitable strong box, and two sheets of lead, one a little larger than the bottom of the box, so as to leave a support for soldering, and the other large enough to go round inside box and to cover the top edge; force gently bottom piece inside, and hammer until the lead is flat to bottom; likewise put side round, and then where sides meet bottom, and one inside, scrape clean and solder. Nail lead only on top of box, or probably you will have a few leakages.—YARDLEY.

5889. **Negatives into Positives.**—Bleach in a solution of mercuric chloride 1 oz, water 10 oz., thoroughly wash, and when dry back with a piece of some black material, when you will see a positive effect by reflected light.—PEN.

5891. **Removing Stains.**—You might try dilute hydrochloric acid. If this won't answer, I am afraid nothing will.—PEN.

5892. **Lantern Slides by Reduction.**—I have need magnesium ribbon in the "Ever-ready" dark-room, and have not yet been smothered, so I think you may fearlessly use it for reduction in a large room. Do not use so small a stop as *f*/16, and Alpha plates are much too slow. I should have given with Thomas's plates and lens full aperture (say *f*/8) about 2 min. Perhaps it was a very dense negative?—PEN.

5892 **Lantern Slides by Reduction.**—I fancy your correspondent is in the same dilemma that I have been in myself, and may be taking over for under exposure, as an over-exposed lantern plate will come out very slowly in the developer, but shows the difference between an under-exposed one by finishing very quickly, and being less clear in the high lights when fixed, while the shadows will be thin and muddy. H. P. does not say in what kind of light he works, which, of course, is an important factor in reckoning the exposure. Thomas's plates are slow for reducing. I prefer Mawson's, and find in reducing a whole-plate negative with a 5 in. focus lens, stop *f*/12, in good diffused light out of doors during summer months, and using a white reflector at 45 deg., the standard time is 2 min. Of course, more will be required for a dense negative. I began by giving 10 min., and thought that was insufficient because the image came up slowly, so increased the time to 22, when fortunately someone put me straight. *Re* the magnesium wire, the article in last week's AMATEUR PHOTOGRAPHER set me trying it for reduction. Finding the fumes decidedly unpleasant, I threw the window wide open, and then found no inconvenience; then by carrying out the instructions, with one exception, *i.e.*, burning one piece of wire instead of two, and moving it slowly about, I managed to get some good results, and found that about 9 in. of ribbon burnt as 4 in. from negative (with glass between light and negative) was right for cold tones. For warm tones use more wire.—J. D. PEARSON.

5875. **Acid Alum Fixing Bath.**—I have tried an acid alum fixing bath for negatives; the formula was given in one of the periodicals. It certainly was acid, but it was not a fixing bath, as the negatives would not fix in it, and were completely spoilt and badly stained. Although no doubt it is quite possible to get it to act satisfactorily, still I think it is safer to use an ordinary bath. I have found the following acid fixing bath quite satisfactory, viz.:—

Hyposulphite soda	1½ oz.
Meta-bisulphite soda	½ ,,
Water	10 ,,

for bromide paper, and for negatives the following, viz.:—

Hyposulphite soda	8 oz.
Meta-bisulphite soda	2 ,,
Water	40 ,,

If developing bromide paper with iron, of course it goes straight from the developer into the fixing bath without washing, as this takes the place of the ordinary acid clearing bath. If you want to harden your negatives and papers, why not use a separate alum or chrome alum bath, and if the developer contains a carbonate such as carbonate soda or potash, etc., or sulphites, don't alum them till after fixing and washing. The following bath may be used, viz.:—

Chrome alum	½ oz.
water	10 ,,

I have seen lantern plates quite spoilt by being put into the fixing bath without having the alum properly washed out. Of course special acid fixing baths save time, but it is worth while to go to a little extra trouble to be sure of your results. I may say I have ruined bromide prints developed with hydroquinone by putting them into an ordinary clearing solution; they came out beautifully spotted, only the spots did not. I think it is safest to follow the makers' instructions, as there are often peculiarities in some brands which the makers are fully aware of, and which make it quite possible that what suits one won't suit another.—J. W. S.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find the replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

M. P.—There are evidently more things in photography than are dreamt of in your philosophy. We cannot do better than quote from Chapman Jones' "Science and Practice of Photography," as to a system of intensification: "(1) Mercuric chloride followed after well rinsing with sodium sulphite gives the little addition of brilliancy sometimes wanted in a carefully-made and successful negative. (2) Mercuric chloride on the original negative, followed, after thorough washing, by ferrous oxalate, gives about as much increase of density as compared with No. 1, as number 1 gives when compared with the original negative. (3) A repetition of the application of mercuric chloride and ferrous oxalate—that is, these reagents applied to the result of number 2—gives another step in the intensification (Note—the result of this treatment is about equal to the action of mercuric chloride followed by ammonia upon the original negative). (4) The result of number 3 may be treated again with mercuric chloride and ferrous oxalate, and so on, as may be necessary. (5) The fourth or fifth consecutive application of mercuric chloride and ferrous oxalate will probably give a result about equal to that of the uranium intensifier acting upon the original negative. (6) If a still greater effect is desired, the lead intensifier may be used on the original negative." Is this what you want? We should then place the series as follows: (1) Mercury and sulphite. (2) Mercury and ferrous oxalate. (3) Ditto, on result of 2, or mercury and ammonia. (4) Mercury and ferrous oxalate on result of 3, or Monckhoven's cyanide, or bromide of copper. (5) The fourth or fifth application of mercury and ferrous oxalate, or uranium intensifier. (6) Eder's iodo-cyanide intensifier. (7) The lead intensifier.

F. M. PELLATT.—Rub your mercuric chloride to powder, drop the acid on to it, and add the water warm. The quantities are misplaced; it should be, we think,

Mercuric chloride	45 gr.
Hydrochloric acid	½ oz.

See answer above. Re-intensified negatives will keep if properly washed.

R. S., A. M. W., and R. T. O.—Many thanks for letters. We have placed the matter in the hands of the local police, and await their report before publishing anything definite.

G. E. T.—See brief leader this week.

R. BASSETT.—Let us know the focus of your lens, and then we can answer you. But we should say not.

NOVICE.—The easiest method of detaching prints from glass is to allow the same to soak for ten or fifteen minutes in warm water, to which a little acetic acid has been added, about 1 part in 20.

H. P.—The usual way is paste the back of the print thoroughly with freshly made starch; whilst the print is still damp and on the glass, apply a piece of waterproof backing paper, allow to dry, and then mount in the usual way. You may also use an alcoholic gelatine mountant or spirituous solution of shellac and sandarac, or solution of indiarubber in benzole.

GRAVITY, BIRMINGHAM.—(1) Slightly over-printed and considerably over-toned, too much foreground and not enough sky. (2) Over-toned, and not artistic. (3) Fearfully over-printed, and over-toned. (4) Much over toned. (5) Traces of hypo, we should say, were the cause of yellow stains; probably your fingers were not clean. (6) You are not using suitable plates. Ilford ordinary are not suitable for this work; try their medium or rapid isochromatic, and you will get far better results. We will try and give you an article. What do you particularly want to know?

P. S. FOSTER.—Use the bath recommended in Answer 5884, and dilute with three times the quantity of distilled water; about three grains of chloro-platinite should be enough for twelve 8½ by 6½ prints.

K. T.—We think we answered your letter by our article last week. Try the oxalate and phosphate bath, but there should not be much change of colour in the prints, whilst in the toning bath, as the tone gets colder. A simpler bath is the following:—

Sat. sol. cream of tartar	4 oz.
Chloro-platinite of potash	1 gr.

Free your prints absolutely from silver, and after toning immerse in

Salt	1 oz.
Sodium sulphite	2 oz.
Water	8 oz.

then wash and fix in alkaline hypo. Tone by yellow light, and be careful that all free platinum is washed out before placing in hypo.

J. W. FORREST.—You will not get warm tones on the plates you name with ferrous oxalate. If you prefer this developer, and you won't readily beat it, try the Ilford Alpha plates, and the longer the exposure, and the weaker your developer in iron, the warmer the tone. You will find full instruction for the Paget plates for warm tones on p. 381. Write to Henry Park, 5, Station Buildings, Acton Street, Kingsland, for a description of Bruno's hand-camera, or, as it is up your way, call on him and see it. It would just suit you. Yes, we can lend you some slides. Write, and let us know what date you want them for?

J. E.—Do not place your sitter too near or too much in a straight line with the window. Draw up the blinds and pull back the curtains. We should think about 15 sec. exposure would be about right. Use a sheet over a clothes horse as a reflector for the shadow side. You would find some articles on "Home Portraiture" in our issues from March to June, 1891.

MRS. CLEASBY.—The films we sent you were developed with the fixed alkaline carbonates, not ammonia, and you would find that they will not give you green fog, when ammonia will. It is a little difficult to state definitely what is the cause of green fog; it may be the emulsion or from the films being stale or them having been kept in an unsuitable place.

H. HOLT.—Don't try the process if you do not like it. We only say that it does lend itself to artistic effects, and the medium-surface paper is by no means very rough.

TYRO.—(1) Sheets of opal glass, either matt surface or plain, coated with bromide emulsion, can be obtained commercially, and they only want exposing behind in close contact with a negative to artificial light and then developing with ferrous oxate or other suitable developer. The Paget Prize Plate Co. have also introduced printing-out opals which are treated just like chloride papers. (2) To make enlargements without using a lantern, and we presume you mean by artificial light, see our leading articles, "Notes on Enlarging," p. 282 vol. XV. (3) The glasses and hacks may be obtained from Fallowfield, 146, Charing Cross Road; Adame, Aldersgate Street; or Percy Lund, of Bradford, make a solution of gelatine 20 gr. to the oz., clean the glass, immerse in the hot gelatine solution, immerse the print, bring the print on to glass, squeegee down well, and allow to dry.

H. F. LINGING.—You might try salts of lemon, but we should rather suggest trying to erase the ink with a sharp penknife or ink eraser.

W. G. MERRITT.—Over exposure is the fault of your bromides. Cut the exposure down one-third at least. We may probably be your way this month, and will then give you a call.

ASPIRANT.—In the first place you will hardly turn out successful work in an ordinary room. You must work either outdoor or in a conservatory. Use rapid Isochromatic plates. The black backgrounds are obtained by using black velvet or deep red cloth, and there is a vignetter placed just in front of the lens or between the lens and plate inside the camera. The exposure in a good light outdoor with lens at *f*/4 would be about 5 sec. this time of the year. We shall probably have article on subject soon.

ERA.—It was a slip; we should have said chloroplatinite 2 gr. We sympathise most heartily with you all, and are not by any means satisfied that it was fair.

J. K. SMITH.—River Aire: good, only wants clouds. Kirkstall: this is a little spotty in the sky, and clouds not strong enough. Greta: good. Thornton does not want figures and wants clouds, but good technically. Copy wants clouds badly. Elephant good, but man too weak. Temple good, but wants masking properly. Technically all the slides are very good.

QUARTER-PLATE.—Try Fallowfield, 146, Charing Cross Road; price varies from 15s. to 21s. We should, however, prefer a hamhoo, something like Park's.

HON. SEC.—Our publishers can supply you with some. 6d. each.

JACOBUS.—The best way is to fit your lens in the tube, cut a circular diaphragm so that it will just fit in the tube, then fix the lens on camera and move the stop in or out in the tube till you get the field you want covered. Probably your stop is too far off. We should say it ought to be about 1⅛ in. in front of lens. Your portrait is good, but the background is not pleasing. Thanks for good wishes.

J. B.—We shall always be glad to help you. The technical qualities of your negatives were alright, except for a little under-exposure. We like yellow negatives, preferring them above any others as giving better prints. Yes, you can certainly get very good prints from them, both in platino and carbon. The red putty answers quite as well as matt varnish. To colour your varnish yellow, add gamboge or spirit soluble aniline dye. Rehalogenieation, etc., may be done in white light. Try your luck in "Holidays with the Camera." Your platinos, are a little too harsh, and No. 2 has, we should say, bronzed in printing, partly due to the harsh negatives. Your hot-bath paper would be alright.

SQUIRE.—The Carlotype Co., Rainham, Essex.

F. W. PILDITCH.—Many thanks to you and council for resolution; always glad to be of any service.

WINTERSETT.—Most certainly.

J. H. COLE.—Use the following:—Heinrich's gelatine 30 gr., soak in water for half an hour, pour off the water, melt in a water bath, and add 1 oz. of caramel. This takes a long time to dry, but when set you can squeegee a piece of red non-actinic paper to it. A better one is caramel, thick mucilage, and sienna 1 oz. of each, rub down in a mortar, and apply with a broad brush.

TYNEMOUTH.—Print deeper, tone to a rich warm brown, and trim your print down so that the three dark spots are just included on the left; with suitable clouds you would then have a picture. For information as to clouds see last week's issue, p. 408 The article will be continued. Prints sent in to our Monthly Competition are not returnable; unsuccessful ones in our large competitions are returned.

E. D.—We should say that 45 sec., No. 2, was the nearest to correct exposure. Discard hydroquinone, the cause of your muddy tone, and use ferrous oxalate, To tell the sensitised side, lay the paper on the hand, and the side which curls in is the prepared side.

FERROUS OXALATE.—The paper on Warm Tones on Bromide, in our issue for June 24, p. 484.

BROMIDE.—We should not like to say until we see a negative, but at a guess we should say over-exposure. Can you send negative up?

W. H. PRATT.—Send the camera to H. Park, 5, Station Buildinge, Acton Street, Kingeland, London, N. He repaired ours for us. If you like to send the camera up to us first, we will have a look at it.

FRED.—Marion's, 22, Soho Square, W., sell Cowan's opal printing-frames 8½ by 6½, 5s.; this size takes all smaller ones.

BLANCHE.—In albumen prints you have not only free silver, but also free acid to wash out before toning. Dipping your prints into a fairly strong solution of common salt to which some carbonate of soda has been added will obviate a long wash.

BOTANY BAY.—Solarisation means that instead of that particular portion of the paper being dark, it has turned light again. We prefer faint cream tints on grey mounts. Glad to hear you are successful with your copying now. You know of course that magnesium ribbon burnt in a box with a thin ground-glass front would reduce your exposures enormously. "Holidays with the Camera" competition closes 31st inst.; not more than twelve or less than six prints must be sent in.

MR. WHITTARD.—The large sea piece at Pall Mall was in carbon, and we do not think it possible to obtain that tone exactly. You will find instructions for obtaining all colours on bromide paper in our issue of June 24, p. 484.

J. H. B.—Your best plan would be to send the objective to Crouch, 66, Barbican, Swift, 81, Tottenham Court Road, or Wray, Laurel Villa, Highgate, who will correct it for you for a small sum, about 10s. You can use the monochromatic light to focus by; Zettnow's cupro-chromic solution being the best.

E. C. L.—Watkins gives the speeds of Marion's Ordinary 35 T.C.L. as 8, therefore the latter require 4½ more exposure.

P. HARRISON.—(1) Taken wrong way of plate, but very fair. (2) Printed too deep, wants clouds, and water too white on left. (3) Spoilt by figure, and wants clouds. (4) Flat and stained. All your prints show marks or stains from careless work.

YELTRAH.—Thin and full of detail negatives are best both for enlarging and lantern slide work.

H. J.—Thanke for letter, which is satisfactory.

ENQUIRER.—Cannot do better than stick to the plates you have been using, both for snow and copying. We hope to have article on the same shortly. To copy, merely set your camera up, focus as large as wanted, and expose; in a fair light in a room, about ten minutes is enough. You must have special printing-frames, and you cannot see through the back of opal. We hope to have an article next week on this work.

J. C. H LEICESTER.—(1) It is impossible to use chloroplatinite of potash in conjunction with hypo, as hyposulphite of platinum is formed, which stains a very deep yellow. (2) Probably the exposure would be too long, but we are now making experiments. (3) Don't think there's a pin to choose between; we always use B. (4) Yes, always glad to loan out.

J. B.—To strengthen the shadows more than the high lights, you must use rehalogenisation, this is the only process that will do that. The intensifier you have is Monckhoven's.

AZAM.—First-class results can be obtained on A, but you must be careful in working it. We prefer A to toned B.

THORNHILL AND F. PARTRIDGE.—The application of the method described to soda and potash is easy. Work precisely the same, using citrate of potash instead of citrate of ammonia. Make the citrate of potash by neutralising 720 grains of citric acid with bicarbonate of potash, 944 grains. Dilute as wanted, by adding one part to five of water.

CYCLO.—See answer above. You cannot do better than use

Chloride of gold	4 gr.
Bicarbonate of soda	90 „
Distilled water	16 oz.

No; copies of portraits are not admissible.

AN AMATEUR.—(1) Too black in right-hand corner, wants clouds, and is too panoramic or topographical in character. (2) Water too white—print wants dodging with glycerine in developing. (3) Ditto. Taken wrong way of plate, too flat, no principal object. (4) Wants clouds; the best. (6) Too black, badly chosen point of view, no principal object.

H. D.—(1) Too much top light, and also cross lights from each side. (2) Ditto, prints over-toned. Use isochromatic plates, and give rather long exposures, and be careful to obtain thin delicate negatives without harsh contrasts. As to exposure, we are afraid we cannot give you much help, but with *f*/16 and rapid plates about 2 secs.

GEO. WORLEDGE.—You should have focused your foreground and left the sky to take care of itself. (1) is overtoned, but No. 2 better. Be more careful in trimming your prints. We will try and tone your prints, and let you have them back this week.

Sale and Exchange

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* **2½ per cent.** *will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques or Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.,** *or a commission of* **2½ per cent.,** *upon the sale price of the apparatus.*

Cameras, Lenses, etc.—Half-plate mahogany camera, square leather bellowe, revereing and double ewing back, rising and falling front, and one double dark slide, 25s.; whole-plate ditto, 32s. 6d.; 12 by 10 ditto, 45s.—Shipman and Co, Photo Printing Worke, Ilford, London, E.

Chadwick's hand-camera, six dark slides, Wray's 5 in. detective lens, bamboo stand, cost £7 7s., £3 10s. taken.—E. Ravenewood, Bromley Road, Beckenham.

Splendid 7 by 5 rapid rectilinear lens, good definition, *f*.8, only 17s. 6d.; camera and few other things list for stamp.—Cheltenham House, Stroud.

Half-plate bellows camera, with shifting front, reversible swing back, and three double dark slides, nearly new, cost £3; also cheap half-plate bellows camera, with lens and one double dark slide, exchange the lot for Kodak or good hand camera.—James Murphy, 69, Wellgate, Lanark, Scotland.

Dark Slides.—Dark slides, five half-plate Instantograph, with quarter carriers, 7s. 6d. each, 6s. 6d. without carriers; and four quarter Instantograph slides, 4s. 6d. each, quite perfect; approval.—Thomas, 2, Pelham Road, High Road, Ilford, E.

Hand-Cameras, etc.—A Talmer hand-camera, R.R. lens, as new, sell for £3 5s. cash.—G. E. Franklin, Rickmaneworth.

Millar's Adelphi hand-camera, Wray lens, as new, £4 10s.—E. N. Ellis, 2, High Street, Wavertree, Liverpool.

Lantern Slides.—One dozen beautiful lantern slides from negatives that have taken five prize medals, 12s. 6d. post free; sample slide, 1s. 6d.—E. Pearce, 76, Church Street, Stoke Newington, N.

Fifty fine Swiss lantern slides and 40 do. the Rhine, sell 6d. each.—G. E. Franklin, Rickmansworth.

Lenses, etc.—1892 half-plate Instantograph lens and shutter, iris stope, as new, 18s. 6d.; approval.—Young, High Street, Somersham, Hunts.

Whole-plate rapid rectilinear lens, iris diaphragms, flange and cap complete, almost new, 30s.—Apply, H. M., 111, Shakespeare Road, Herne Hill, S.E.

Wray's 10 by 8 wide-angle landscape, iris diaphragm, as new. What offers? Approval; deposit.—N. Abbotsfield, Mannamead, Plymouth.

Negatives.—For sale, 20 half-plate negatives—Manx, Wales, Grange, Ingleton, Buxton, etc.—1s. each; also 70 numbers "Photography."—12, Nelson Street, Broughton, Mancheeter.

Rolling Machine.—Cabinet rolling machine, recently cost £7 15s.; no reasonable offer refused.—A. D. Clarke, Pailton, Rugby.

Sets.—Rouch's quarter-plate pocket bellows camera, three double backs, good lens, and ash folding tripod, first-class condition, sell for 30s., cost double.—G. E. Franklin, Rickmansworth.

Lancaster's Instantograph with stand, lens, shutter, and two slides, price 28s.—No. 355, office of this paper, 1, Creed Lane, E.C.

Special. A gentleman giving up photography wishes to dispose of his photographic outfit, consisting of Marion's whole-plate Perfect camera, with Dallmeyer's rapid rectilinear lens, with four double slides, tripod, complete, £5 10s. cash, or offers.—B Leavson, 8, Burnbank Terrace, Great Western Road, Glasgow.

£12 will purchase the following high-class apparatus: Watson's Acme camera, 13 by 18 cm. (7 by 5), all possible movements, double extension, three double dark slides, turntable, three-fold tripod, stand, instantaneous and time shutter, Ross' whole-plate rapid symmetrical, whole-plate wide-angle lens, waterproof case, splendid condition, cost £21.—Address, Robert Teglio, Mevagissey, Cornwall.

Giving up photography. A bargain. Complete outfit, two cameras (half-plate Meagher and 10 by 8),

Ross' lens, etc., all in good condition, can be seen, £15 the lot.—L. R., Clarke's Library, 2, Colherne Terrace, Richmond Road, S.W.

Sundries.—10 numbers of "The Amateur," '91, 55 numbers and 3 numbers of the "Photographic News," '89 and '91, lot 4s. 6d.—Frederick Sharpe, Church Street Oakham.

AMATEUR PHOTOGRAPHER, first 13 vols., 8 vols. bound half calf, with extra numbers; "Quarterly," vol. 1 and numbers 6, 7, 9, 10; "Societies' Reporter," vols. 1 and 2; "Photographic News," 1884, bound; "Magazine of Art," 1889, unbound, price £3 10s.—John Stabb, 154, Queen's Road, Bayswater.

For sale, Griffiths' camera for making lantern slides from half-plates, also Robinson's half-plate R.R. lens, Waterhouse stops, and Furnell's shutter, Tylar's Aquapoise print washer, four half-plate printing frames, six half-plate film holders (metal). Offers wanted.—31, St. Maur Road, Fulham, S.W.

WANTED.

Hand-Cameras, etc.—Wanted, good hand-camera, Facile or other, perfect order, latest improvements, full particulars, cheap; approval.—Herbert, Blackrock, Dublin.

Wanted, Vanneck hand-camera. Send full particulars to Walker, 156, Nosl Street, Nottingham.

Wanted, Underwood's Sphynx hand-camera. Send cash price and particulars to Dr. Webb, 2, Broughham Terrace, West Derby Road, Liverpool.

Lantern Apparatus.—Wanted, lantern slide reducing apparatus, without lens; will exchange Houghton's changing tent, distilling apparatus, and other photographic sundries.—Pratt, East Bridgford, Notts.

Lantern Slides.—Wanted, lantern slides, state number, subjects, condition, coloured or plain, and price.—Frank Gray, Essex Villa, Stevenage.

Lenses, etc.—Wanted, lens for enlarging camera, about 4½ inch focus, wide-angle, cheap.—A. Dalton, Wantage, Berkshire.

Sets.—Anyone having a Lancaster's quarter-plate Instantograph sets (1891 or 1892) for disposal at a really low price, send particulars to Apel, 53, Robertson Street, Hastings.

Wanted, whole-plate outfit, such as Underwood's Instantograph, Convention; state full particulars and lowest price; approval; deposit.—Hargreaves, Midland Street, Widnes.

Sundries.—Wanted, AMATEUR PHOTOGRAPHER, January to June, 1892, clean, unbound.—Herbert, Blackrock, Dublin.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

Lanterns! Lanterns!! Lanterns!!! Slides! Slides!! Slides!!! The largest and most varied selection in the whole kingdom. Before selecting elsewhere, call and inspect the stock of the City Sale and Exchange, 54, Lime Street, Leadenhall Street, City, where we have no hesitation in saying you will find all that you require in this way. Lanterns for sale, lanterns lent on hire, lanterns sold on commission, or taken in exchange for other apparatus. Write for special supplemental lists, Manager, City Sale and Exchange, as above.

Bargains in Lenses.—Dallmeyer No. 2 B portrait lens, Waterhouse stops, rack focussing, grand definition, as new, £7 7s.; whole plate Wray rapid rectilinear lens, fitted iris stops, covers well, moveable hood, quite new, £4; whole-plate Laverne wide-angle rectilinear rotating stops, as new, 30s.; whole-plate rapid rectilinear lenses, by Parker, Holborn, covers well to edges, Waterhouse stops, moveable hood, as new, 45s.; 9 by 7 Optimus rapid euryscope lens, grand definition, Waterhouse stops, as new, £5 5s.; half plate rapid rectilinear, by Crouch, Barbican, Waterhouse stops, 8 in. focus, as new, £2 7s. 6d.; half-plate wide-angle rectilinear, by Crouch, Barbican, rotating stops, 6 in. focus, quite new, 42s.; cabinet portrait lens, by Laverne, quite new, grand definition, Waterhouse stops, rack focussing, 35s.; quarter-plate Optimus detective camera lens, by Perken, Son and Rayment, Waterhouse stops, as new, 27s. 6d.; half-plate Lancaster's rectigraph lens, thorough order, covers well, Waterhouse stops, take 32s. 6d.; half-plate Lancaster Instantograph lenses, irie stops, and instantaneous shutter, 15s.; half-plate Ross' rapid symmetrical lens, as new, fine definition, Waterhouse stops, £3 17s. 6d.; pair very fine Argus 5 by 4 rapid rectilinear lenses, accurately paired for stereoscopic work, fitted Waterhouse stops, moveable hood on front, and with camera division, take 42s.; Optimus quarter-plate portrait lens, rack focussing, Waterhouse stops, quite new, 21s.; 5 by 4 Optimus rapid rectilinear, by Perken, Son, and Rayment, Waterhouse stops, 27s. 6d.; Swift 5 by 4 wide-angle rectilinear, 5 in. focus, rotating stops, 32s. 6d.; ¼ plate hand-camera lens, by Laverne, rapid rectilinear, adjustable focus, 15s., quite new. All above lenses are warranted as described.—On view, City Sale and Exchenge Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Bargains in Hand Cameras.—Crouch hand-camera, covered morocco leather, carries twenty-four quarter-plates, fitted Crouch lens, iris stops, shutter, etc, £3 7s. 6d.; Lancaster's Omnigraph, carries six quarter-plates, thorough order, with shutter, 16s; No. 4 Kodak, as new, size 5 by 4, carriss 100 films, fine rapid rectilinear lens, instantaneous shutter, in solid leather case, £7 7s.; No. 3 Kodak, as new, size quarter-plate, carriss 60 films, rapid rectilinear lens, instantaneous shutter, take £5 7s. 6d.; Optimus Magazine, very finest order, Optimus rapid rectilinear lens, carries twelve quarter-plates, roller blind, shutter, focussing adjustment, £5 5s.; Rouch hand camera, quarter-plate rapid rectilinear lens, roller bahind shutter, bag changing, as new, £3 17s. 6d.; Blair's 5 by 4 hand-camera, good lens, time and instantaneous shutter, two finders, rack focussing, three double dark-slides, as new, £3 3s.; Kodak No. 1, best R.R. lens, carries 100 films, best order, in leather cass, 40s.; Fallowfield's Facils, fitted rapid rectilinear lens, carries twelve quarter-plates, as new, £3 17s. 6d. All above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, cornar of Leadenhall Street, City (late Goy's Medium). Second hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Cameras and Sets.—10 by 8 camera fitted all latest improvements, back and front extension, for wide-angle pictures, leather bellows, reversing back, rising and falling front, two double slides, grand condition, take £6 10s. lot; whole-plate camera, by Walker, back and front extension, rising and falling front, double extension, leather bellows, three doublo slides, rapid rectilinear lens, Thornton-Pickard shutter, three-fold stand and case, finest condition, £8 8s.; half-plate Optimus Rayment camera, doubls extension, leather hellowe, rising, falling, and cross fronts, swing and roversing back, three double dark slides, book form, fine rapid rectilinear lens, iris stops, three fold ash stand and case, grand lot, £7 5s., worth double; half Spanish mahogany camera, by 'Lonsdale, Leeds, wide angle movement, double extension, leather bellows, etc., rapid rectilinear lens, Waterhouse stops, double dark slide, and folding stand, £4 10s.; Lancaster'e half-plate 1892 instantograph camera, all latest improvements double extension, leather bellows, etc., double slide, quarter carrier, very fine rapid rectilinear lens, irie stops, and folding stand, set complete, 75s.; half-plate camera, by Percy Lund, back extension, conical leather hellows, three double slides, rapid rectilinear lens, shutter, folding stand, and cass, as new, take £4 10s.; quarter-plate Shew's Eclipse pattern camera (pocket), reversing back, leather bellows, etc, three double slides, rapid rectilineer lens, rotating stops, and roller blind, shutter, fine lot, as new, £2 12s. 6d.; quarter-plate instantograph camera, lens, iris stops, double slide, and folding stand, 27s. 6d.; quarter plate Le Merveilleux set, by Lancaster, complete, 15s.; quarter-plate camera, thorough order, all movements, fine rapid rectilinear lens, quite new, Waterhouse stops, folding stand, and four double slides, set complete, 27s. 6s. All above sets guaranteed in every detail as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Magic Lanterns and Slides. — Walter Tyler's Helioscopic is perfection of all lanterns, supplied to Indian Government, School Boards, science classes, clergy, and exhibitors throughout the world. Impossible to have lanterns give better definition or more satisfactory results; specially constructed lens, which no other lantern possesses.—Walter Tyler, 48, Waterloo Road, London.

Walter Tylor's Best Triples and Biunials are unsurpassed, and perfect in every detail. Good biunials, mahogany hodied, brass fronts, and all improvements, £7 10s; eingle lantern, with 4 in. condensers, portrait front lens, 4-wick lamp, complete, in case, 27s. 6d.—Walter Tyler, 48, Waterloo Road, London.

Lantern Lenses.—Specially constructed. Walter Tyler's new Helioscopic portrait combination lantern lens gives the most perfect definition and brilliancy, can be fitted to any lantern, and for excellence cannot be surpassed. No other maker has this lens, which is manufacturad expressly for Walter Tyler, 48, Waterloo Road, London.

Regulators and Gauges.—Great reduction, in price. Either can now be had of Walter Tyler for 14s. each. The largest stock of gas cylinders in England. Best seamless steel, tested and valved, and all eizes at very low prices.

Slides from Negatives and Pictures.—Walter Tyler manufacturee and colours slides on the premises, thus ensuring speedy delivery, and pricee are most moderate.—Walter Tyler, 48, Waterloo Road, London.

Biunial Lanterns.—If you are in want of a really good biunial lantern, perfect in every respect, call and see Walter Tyler's entire brass frontod, mahogany-bodied, lined with Russian iron, and fitted with new best quality lenses, and sold at a most moderate price. The top lantern will take a 4-wick lamp. These are great bargains.—Walter Tyler, 48, Waterloo Road, London.

Hire Department is now perfect. Largest and best collection of slides in the world; over 200,000 always in stock. Temperance, travels, Scripture, educational, comic, tales, etc. Chaaper than any other house, no extra charge for coloured slides or effects. Special terms for large quantities.—Walter Tylor, 48, Waterloo Road, London.

Lanterns and Slides.—If you wish to hire, purchase, or exchange, you cannot possibly do better than go to Walter Tyler, who makes this business a specialite, and you will thus save dealer's and all intermsdiate profits.—Walter Tyler, 48, Watsrloo Road, London.

Second-hand Lanterns and Slides at very moderate prices, also all kinds of apparatus. Send for large catalogue, 420 pages, with instructions for working lanterns of all kinds, and costing an immense sum to produce, sent free for 6 stamps. Small catalogue and second-hand list, post free.—Walter Tyler, 48, Waterloo Road, London.

Bijou Enlarging Lanterns.—Finest results with Hughes's patent rectangular condensers, half the size of ordinary make, superior definition, propar diffusion of light; scientifically constructed, not commercial; eeveral whole and half-plate for sale, cheap.

The Marvellous Pamphengos. — Finest oil-lighted lantern, equals limslight, stood the test of over fourtsen years against all imitations, elegant solid brass fronts, best lenses, from £2 10s. each.

Magic Lanterns, Magic Lanterns.—Largest assortment in the world, cheapest and hast, nicely japanned lantern body, 4 in. double condensers, portrait front lenses, rack and pinion, four-wick lamp, in case, £1 7s. 6d. Others more elaborate, but cheap.

The Docwra Triple Prize Medal, highest award, supplied to Dr. H. Grattan Guinness, Capt. C. Selwyn, Madame Adelina Patti, and the Royal Polytechnic, etc.

The Malden Triple; supplied to B. J. Malden, Esq.; unparalleled results; Capt. Chas. Reade, R.N.

Fine Triple Lantern; four set of large diameter lenses, £32, cost £60. Given away.

Special Triple; mahogany, entire solid brass fronts, £12 12s.; a really good lantern, unequalled.

Elegant Mahogany Biunial; brass fronts, £7 10s.; blow-through safety jets, 11s.; mix gas jet, 15s. 6d.; Malden double dissolving tap, 15s. 6d.; a number of grand effects; particulars free, before purchasing. Send for Mr. Hughes's grandly illustrated catalogue, over 180 fine wood engravings, price 6d.; postage 3d.; separate list of 60,000 slides, price 6d.; postage 3d.; pamphlets free; second-hand lists of bargains.—W. C. HUGHES, Brewster House, Mortimer Road, Kingsland, London, N. 50 coloured slides on loan for 3s.

CHRISTMAS CARD MOUNTS, gold blocked mottos, fancy bevelled edges, various samplee; 1s. and 2s, post free.—Hooper and Co., mount manufacturers, 5, Hand Court, Holborn, London. Price list of all kinds of mounts post free.

ENLARGING APPARATUS.—Hume's enlarging apparatus, 5 in. condenser, without objective, 61s.6d.; with 8 in. condenser, 122s. 6d., carriage paid.—Hume, 1, West College Street, Edinburgh.

IMPORTANT TO AMATEURS.—Negatives skilfully Retouched. Printed in silver, gelatino-chloride, etc., and Eolarged. Also Developing, Copying, etc.—Terms strictly moderate.—Address, Wilfred Emery, 24, South Street, Baker Street, W.

THE BOOK OF THE LANTERN.

BY T. C. HEPWORTH, F.C.S.

A Practical Guide to the Working of the Optical (or Magic) Lantern—either as an Educational Instrument, for Exhibition Purposes, or as an Enlarging Apparatus for Photographers. With full and precise Directions for Making and Colouring Lantern Pictures. Price 3s. 6d., post free.

"Here we have something like a lantern manual! A handsomely bound, comprehensive work, written by an acknowledged master in lantern operations."—*Photog aphic News.*

"Comprehensive, and is characterised by an excellent literary style."—*British Journal of Photography.*

"It is without exception the best book that has been published."—*The Amateur Photographer.*

London: HAZELL, WATSON, & VINEY, LD.,
1, Cresd Lane, Ludgate Hill, E.C.

The AMATEUR PHOTOGRAPHER

Telephone No 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No 428. Vol. XVI.] FRIDAY, DECEMBER 16, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc, from 10 till 1 o'clock.

Our Views.—Miss Barnes and Mr. Snowdon Ward—The Cleveland Camera Club Exhibition—The Polytechnic Exhibition—Aluminium—Woolwich Polytechnic Exhibition—The Hackney Dispute—Notice—The Duties of a Hon. Sec.—Unappreciated Secretaries—A New Decision of the Camera Club—The Leytonstone Club Dinner—The Humours of Photography—A Tip—Moonlight Effects—The Limits of Photography—Exhibitions and Medals—Proposals—The Abolition of Medals—The Only Good—Snow—A Sharp Bit of Work—Folk-lorists and Photography—A Suggestion.

Letters to the Editor.—Photographers and Folk Lore (Ordish)—S. London Exhibition (Main)—Packing Plates (Williams)-Employment of Oxygen (Hepworth)—Society for Harringay (Frith)—Speed Numbers (Britannia Works Company)—Lantern Slide Carrier (Vevers)—Hackney Phot. Soc. Trouble (Grant)—Exhibitions and Medals (Mantell; P.)—S. London Phot. Soc. (Oakden).

Articles.—How to Make a Set of Photographic Apparatus (H. J.)—Study and Practice of Art in Field Photography (Hinton)—Silver Printing with Matt Surface (Austin)—Skies in Photographs (Hodges)—Platinum Toning (Leeson).

Reviews.—American Annual of Photography.

Apparatus.—Amidol Cartridges—Combined Lantern Mask and Binder—Optimus Magnesium Lamp—Anschutz Tachyscope—Wormald's Cutting Board.

Catalogues.—Thornton-Pickard Co.—Taylor, Taylor, and Hobson.

Societies' Meetings.—Accrington—Bath—Blackheath—Bolton—Bristol—Cardiff—Cornish Camera—Douglas—Edinburgh Univ.—Glasgow (High School)—Hackney—Hove—Liverpool—N. Middlesex—N. Surrey—Phot. Soc. Ireland—Rochester—Rotherham—S. London—Tunbridge Wells—Walsall—Wolverhampton—Woolwich—York.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom.....	Six Months, 5s. 6d.	Twelve Months, 10s. 10d.
Postal Union	" " 6s. 6d.	" " 13s. 0d.
Out of Postal Union ..	" " 7s. 9d.	" " 15s. 8d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Competition, No. 43.—"Portraiture and Figure Study." Latest day, December 19th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in the Amateur Photographer Supplement, January 13th, 1893).

Our American visitors at the Convention, Miss Catherine Weed Barnes and Dr. Mitchell, have, if we may judge from their notes which have appeared in some of our Transatlantic contemporaries, carried off many favourable opinions of England and English photographers, and we trust also good impressions of English scenery on their plates and films. But we venture to think that Miss Barnes has left a strong and lasting impression behind her, for we have to announce the engagement of Miss Barnes to Mr. H. Snowden Ward, the well-known editor of the *Practical Photographer*. As we understand that neither will cease from journalistic or photographic work when the partnership is completed, we shall not lose either from amongst us, and we are quite sure that all will join in wishing them success and happiness.

The Cleveland Camera Club will hold an exhibition and conversazione on Wednesday, February 1st, 1893, and three silver and three bronze medals are offered—

For Members only.

Class I.—Set of prints in one mount.

Open to All.

Class II.—Single photographs (any subject).

Class III.—Lantern slides, sets of six.

All entry forms, with entrance fee 1s. for each picture, must be sent to J. J. Hallam, 11, Amber Street, Saltburn-by-the-Sea, by January 25th, from whom entry forms may be obtained.

The Polytechnic Photographic Society will hold an exhibition of members' work on 31st inst. and January 2nd, 3rd, 4th, and 5th, 1893. Mr. Quinton Hogg, the President, offers a silver and a bronze medal. Mr. Howard Farmer and Mr. E. J. Wall will be the judges, and the latter will also exhibit the Amateur Photographer Prize Slides on the 31st inst.

It is stated that Dr. Meyer, of Berlin, has discovered a process by means of which aluminium can be produced at *twopence per pound*. In 1828 the price was £1,000 per pound. The price to-day is 4s. per pound. Here we have vast possibilities opened to us. There is said to be ten times more aluminium in the world than there is of iron, lead, copper, zinc, nickel, gold, and silver combined. It is stronger than iron, and more malleable than copper, as hard as silver, and one-fourth the weight, as white as polished steel, and is unaffected by the atmosphere.

THE Woolwich Polytechnic Photographic Society will hold an exhibition on February 16th, 17th, and 18th, 1893. The judges will be Messrs. F. P. Cembrano, A. R. Dresser, and Andrew Pringle. The following are the classes:—

SECTIONS.

1. (For members only) Prints, any subject by any process.
2. (For members only) Lantern slides, best set of six, any subject.
3. Open to all amateurs, any subject by any process.
4. Open to amateurs who have never received an award in open exhibition.
5. Lantern slides, open to all amateurs, best set of six.
6. Hand-camera work. set of four prints taken with camera held in the hand, not on a tripod (enlargements debarred).

A gold medal (presented by the Right Hon. the Earl of Carrick), for best picture in the exhibition. Silver and bronze medals and certificates in all classes will be placed at the discretion of the judges. Entry forms, etc, may be obtained from the Hon. Secretary, W. Dawes, 145, Chesnut Road, Plumstead, Woolwich.

WE publish this week further correspondence on the unfortunate dispute about the Hackney Photographic Society's silver medal for lantern slides. The following statement of facts about this case, which promises to be at least a *cause célèbre* in photographic circles, will be interesting.

At the Hackney Society's Exhibition, the Secretary was informed that two of the slides exhibited by Mr. Austin had been previously medalled. Immediately on receiving the judges' award, Mr. Austin was telegraphed to asking whether he had sent in any medalled slides? He replied, "In reply to yours, I have not been guilty of any violation of your regulations, which I have again carefully perused."

The regulations bearing upon this subject are as follows:—

NOT FOR COMPETITION.—The Committee will be very pleased to receive pictures for exhibition and not for competition—*such as medal pictures (which cannot compete)*, or pictures illustrating any particular process, etc. No charge for entrance would be made.

WORK DONE BY EXHIBITOR.—All work, except mounting and framing, must be done by exhibitor. No exhibitor to take more than one medal in any one class. *No prize picture can compete; photographs, except in Classes E, H, I, and J,* can be by any process (transparencies and opals excepted).

In Classes E, F, G, winning pictures or copies to become the property of the society.

It is evident that the committee at least consider lantern slides as pictures, because Class E is "for set of four lantern slides." A note on this subject will also be found in the report of the Hackney Society this week. Mr. Grant, the Treasurer of the society, took the trouble to go to Peterborough to compare the slides with the set sent in by Mr. Austin for the AMATEUR PHOTOGRAPHER Lantern Competition, and for which he was awarded a silver medal. In a letter to our provincial contemporary of last week Mr. Austin says that if he had had six medalled slides at hand when packing them, he would have sent the lot.

Yet this is in the face of his threat of "proceedings" against the gentlemen who said his slides had been medalled, and his statement that he had not violated the regulations.

ONE and all must regret that Mr. Austin has not seen fit to acknowledge his mistake and gracefully retire, and whichever way the "proceedings" end we are quite sure that all our readers will admire the quiet, firm stand the Hackney Photographic Society have taken, and be grateful for their attempts to settle this much vexed question of awards to previously medalled work.

PERSONALLY we think that there is not the slightest doubt about the result of legal proceedings, and that Mr. Austin's behaviour on this occasion will do much to alienate any sympathy one may have felt for him.

SURELY in the face of all this trouble we may expect some concerted action to be taken on the subject of exhibitions and medals generally.

WE wish to draw the attention of our readers to the following announcement:—

In no case will the Proprietors of the AMATEUR PHOTOGRAPHER undertake to buy or sell any goods on commission, nor will they be responsible for the safety of any negatives or prints sent to the Editor of the AMATEUR PHOTOGRAPHER for any purpose whatever, although all reasonable care will be taken of the same.

The Editor claims the right of refusing any print, lantern slide, etc., sent in for competition, without assigning any reason for such refusal.

IN the course of editorial correspondence this week, the question occurs as to whether a secretary of a society is entitled to furnish to an unknown applicant the names and addresses of the members of his society. It were difficult to say if there be an actual right or wrong in the case, but we should have no difficulty in finding an authoritative precedent for refusing the addresses of members, whilst it might be impossible to withhold a list of members' names to anyone. We believe the Camera Club adopts this rule, thereby offering a check upon the industrious advertiser, who would probably hesitate before addressing some hundreds of circulars or letters to *one* address, and thus betraying himself. In these days it is to be feared that too many ally themselves with private clubs, institutions, and similar bodies formed professedly for mutual aid purely for the advancement of their own individual interests.

THUS philosophising on the duties of a Hon. Secretary we are often surprised to find what an astonishing amount of real hard work these gentlemen go through, and how inadequate is oftentimes their reward, and the marvel is how these hard-working officers find time for their own photographic work in addition to their private business and social engagements. So let our friends respect the Hon. Secretary of their particular society, if he be a good one, and see they keep him, and render what help they can.

BY reason of the position which the Camera Club possesses, it almost goes without saying that the papers read before its members are usually of more than ordinary merit and importance, and hence it is to be regretted that a wider circle than the members of the Club cannot profit thereby. The Committee of the Club, however, have determined to strictly reserve the right of reproducing these papers or of copying them from the Club Journal. We can hardly blame the executive for taking this step for the protection of what the members may consider their special rights, but we regret that we shall not be able in future to give our readers, many of whom are too far away to otherwise hear of or read them, the opportunity of perusing some of the interesting communications which are from time to time made to the Club in Charing Cross Road.

THE Leytonstone Camera Club held their first annual dinner on Saturday last, and a most enjoyable evening seems to have been spent. Important business matters were discussed by way of dessert, the gist of which we are not at liberty to divulge, but from what we hear it augurs well for the future of this strong and energetic suburban Society.

A CONTRIBUTOR to the current issue of *The Theatre* runs on to some length on the "Humours of Photography," portraying some of the characteristic types of visitors to West-end photographic studios. The vanities and confidences of sitters of both sexes are retailed, and, as is usual in such cases, overdrawn. Thus we are told that "fashionable photographers generally adopt one golden rule with reference to portraits of actresses; they proceed to entirely destroy all likeness in the portrait taken, and to build up a fancy picture on what is left; the result is that their photographs are considered charming," etc., etc., etc. This is all very well by way of a joke, but somehow we are still able to recognise actresses by their portraits, and vice versa. The fact is, a series of really clever studies of character written by the photographer, entitled "My Visitors," or something of that sort, might make excellent reading, but they must be truthful impressions, and the professional photographer must have leisure, and also possess artistic literary instincts. If only Mr. Rudyard Kipling, for instance, would for a few weeks take the position of reception-room attendant in a Bond Street or Regent Street photographer's, we might have some amusing sketches for a Christmas annual.

IN contact with the "sticky" surface of an imperfectly dried gelatino-chloride print, "waxed" paper may be safely used. This may be a useful hint for those who, when occasion requires, mount a print on such paper half dried—half dried because these prints become very obstinate and crisp when dry, taking a good deal of persuasion before lying flat.

WE are sometimes asked "how to make moonlight effects," by which is meant not photographs of moon-lighted landscapes, but daylight pictures which look like moonlight. Now we have repeatedly pointed out the necessity for conscientious truthfulness to nature, if we are to have our pictures infused with the poetry and sentiment inseparable from and essential to artistic work. How then is it possible to countenance a sunlight picture which, because it is under-exposed and over-printed, bears some resemblance to the effect of moonlight? Everyone knows on looking at it that it is a pictorial counterfeit and a fraud.

THE impression given is the same as by a photograph of a figure suitably costumed and environed which the photographer calls "Joan of Arc" or "Mary Queen of Scots." We know the thing to be a falsehood, and although the time may come when the photographer may be able to impart so much of the ideal into his work as to carry the spectator beyond recognition of the actual and real, yet for the present, and on existing lines, in such subjects (as in the artistic photography of the nude, which sometimes vainly aspires to suggest the classic) the photographer must recognise his limits and represent the present actual.

IN the multitude of councillors there is much wisdom! So it has been said, and out of the many opinions which last week's press alone produced, one might expect to find material enough to build up a code of laws and appoint an authority which would for ever settle this fearful question of exhibitions and medals. But we venture to say the end is not yet. The utter want of unanimity of purpose in the suggestions offered makes it hopeless that any decision can be come to which shall suit all parties, and a "controlling body" which is exclusive and limited in sympathy (and oil and water won't mingle) will only make matters worse.

To say nothing of such contributions as "Arbiters of Honour" and "Exhibitions and Judges," which, whilst they contain some sensible suggestions, include quite as much that is quite impracticable, our contemporary, the *British Journal*, makes the original suggestion that the Photographic Society of Great Britain shall appoint a Committee to deal with it! Would you raise the dead to life? *All* the societies are not yet "affiliated," and some might—aye, and undoubtedly would—resent the interference of a body which they have only regarded as of an abstract existence.

WE have regarded the abolition of medals in the more important and "open" exhibitions as a not improbable consummation, though it will not be just yet. Our contemporary above referred to, however, finds it as "idle to discuss the question of abolishing medals at photographic exhibitions as it is to cast ridicule on the Prix de Rome, the Royal Society's medals, or even military medals." Rather unhappy comparisons these, and hardly likely to carry conviction. But being apparently unable to clear up the matter satisfactorily, and having delivered himself of the not very impartial statement—"Where an exhibition is organised under promises to the competitors of the award of a certain number of honours, and the latter are withheld by the judges on grounds which they themselves set up, the competitors are cheated, the society itself is insulted, and the whole business is covered with ridicule; it is, in fact, promoting an exhibition on very like false pretences"—the writer of the article proceeds to ask some eight or nine big questions, which, however, he does not attempt to answer.

"DOCTORS DIFFER," and patients will have their say too, and it is probable that the only immediate good which will come out of the present controversy will be to make societies more careful in framing their rules, and judges more circumspect and less ready to accept office without previous inquiry as to what may be expected of them.

THE coming of snow, at least in the southern and metropolitan districts, is long delayed, but there is constantly present the soft grey haze of the damp atmosphere, and thicker mists which make landscape so picturesque and pictures so suggestive. Abundance of water, too, everywhere making reflective little pools amongst the grass, and filling the great cart ruts on the country road. Good reader, don't forget these things ere the frost descends and winter's white robe covers it all up. We strongly recommend, however, the use of a waterproof focussing cloth in place of the velvet or other fabric. The best of mahogany and leather is better protected from the moisture in the air, which at this season of the year can hardly be escaped.

ON Saturday, at a Masonic dinner at Red Hill, Mr. Ralph Robinson was invited to make a photograph of the party by flash-light. This he successfully accomplished at nine o'clock, and within an hour and a half, that is, before 10.30, the company were pleasantly surprised at having finished prints handed round for inspection. Evidently Mr. Ralph Robinson, besides being an artist, is a man of prompt business habits, a characteristic as rare amongst our professional men as is permanent success and abundance of business; and that the latter condition is dependent on the former qualities is a fair and reasonable inference.

A LETTER in these columns suggests the interesting field of "Folk-lore" as one which those who wander about in remote country regions with the camera might do well to enter. Such work would give purpose to a great dea photography which is otherwise aimless, and be of lasting interest and use.

A CORRESPONDENT suggests the desirability of printing "Societies' Notes," "Meetings," "Fixtures," etc., so that when binding up THE AMATEUR PHOTOGRAPHER in a volume, these items, which are of transitory interest, may be cut away without disturbing the rest of the journal. We noted last week that we were near the completion of another volume, and in our desire to be ever improving ourselves and our work, these matters will be carefully considered, and what can be done shall be. Good readers, if you only knew the difficulties in the way of cutting down and yet including just enough, you would know that the Editor sitting in a big chair, conning the journals, and answering a few letters, is, in photographic journalism at least, a very ideal personage. However, we have said we are "going one better," and so we are.

Letters to the Editor.

PHOTOGRAPHERS AND FOLK LORE.

SIR,—The photograph of the Horn Dance, which you reproduced in your issue for October 28th last, was a boon to folk-lorists, and I called special attention to it at the last meeting of the Folk-lore Society. Many of your readers are probably aware that the season of Christmas is celebrated in divers parts of the country by mumming-plays, the actors in which usually appear in fantastic garb of a more or less warlike character, having swords at their sides, and perform a play, in which St. George is the central figure. Now all these popular traditional dances and folk-plays are of great interest and value to students of folk-lore, and amateur photographers have it in their power to confer a great boon upon folk-lorists, by recording graphically these exponents of vanishing traditions. If your readers will bear us in mind this winter, they can make their hobby the handmaid of yet another science, and receive the grateful appreciation of a large and increasing number of students.

It will not be amiss, perhaps, if I explain that the words of many versions of mumming-plays have been recorded; but we are lacking in just those features which are of most importance to the student—significant gesture, action (especially action in concert or unison), costume—features which photography, intelligently directed, can fix and record as nothing else can. For instance, there is a folk-play in Lincolnshire and Yorkshire, known variously as a Mumming-play and Morris, in which the characters unite in clashing their swords in a circular formation around the head of one who is kneeling in supplication for their mercy. In some cases the costume is of peculiar character, as in a case within my own knowledge, and here a photograph in detail, for the purpose of showing the peculiarity, would be desirable in addition to one showing the actors in a group, or in some characteristic position or situation such as above described.

Any of your readers who may be disposed to respond to the suggestion here made, will oblige by forwarding copies of their photographs to the Secretary of the Folk-lore Society, Mr. F. A. Milne, 11, Old Square, Lincoln's Inn, W.C., or to me direct.—Yours, etc., T. F. ORDISH.

41, Great Ormond Street, W.C.

* * * *

SOUTH LONDON EXHIBITION.

SIR,—In common with other amateur photographers, we of the S. L. P. Society welcome your contributor's valuable criticism so modestly hidden under the pseudonym "Young Member."

It is always pleasing to take counsel with genius, and we sit at the feet of this modern Gamaliel; but some slight lack of knowledge of how the judges conducted their tour may somewhat temper the severity of "Young Member's" thunderbolts. The "gentlemen of good stature and physique" had been for some months engaged in crawling competitions, and were fully competent to accomplish the judging by a severe course of acrobatism. To a lay mind it may seem somewhat humorous to know this was accomplished by the judges standing on their heads to get a correct estimate of the pictures "on the floor," but as our motto is "Photographs for photographers," we can afford to treat with silent contempt any such unseemly levity. Again, the conservators of Peckham Hall were adamant on some points; they positively refused to allow us to hang photographs, lantern slides or otherwise, on the roof; this was severe and almost rendered our show nugatory. Does "Young Member" know of the existence of photographic palsy? This will often account for the somewhat uneven lapses which occur in lantern exhibits. We do not want applause, we do not like it even, and our President was going about with "*Timeo danaos ferentes*" writ large all over him.

"Young Member" concludes in the spirit of tempering justice with mercy. He has refrained from writing anything to cause pain to individuals. Noble youth, we thank you, the Black Broth of Sparta becomes turtle once more, the tortures of the Inquisition become a mere wild attack of (Pearson's) nettle rash. "Progressiveness" runs a strong horse, and, promising Young Member that he shall be short-coated next birthday and thanking him for the music of his rattle, we must say good night to him now.—Yours, etc, HUGH MAIN.

* * * *

PACKING OF PLATES.

SIR,—Do you think you could persuade manufacturers of plates, through your paper, to adopt the system of packing their plates in pairs instead of in batches of four or six? It is an unmitigated nuisance to have to pack up the remaining plates of a batch, whilst retaining in the hands at the same time the pair required, for as a rule the hands must at the time be engaged with carrier, black division card, and possibly dark slide. The dark-room has inconveniences enough from its essential darkness without this unnecessary inconvenience being forced into it, and I think I am within the mark in saying that a good many amateurs lose a large proportion of their plates, especially the extra rapid ones, from this cause. In the dark the wrapper may have touched some unforeseen wet place, or in turning, something suddenly checks the arm, and out go the plates from our burdened fingers, or a plate drops from some other cause, or the carrier drops and is damaged, or such a time elapses before all can be repacked or got into the dark-slide that harm has ensued, if the room be not absolutely as white-light proof as it should be. It is quite a comfort when one gets to the last pair of a half dozen and can throw away the paper packing as soon as it is opened.

I would also throw out two other suggestions to your readers. The first is, that before writing to advocate any new recipe or operation, the fullest trial should be given to the point in question. It is worse than unkind, it is absolutely wrong, to send information which cannot be relied on and proves a failure on trial. Take the case of the advocates for printing *very* slightly deeper than required for the Ilford P.O.P. This week alone I have spoiled half a dozen prints through this advice. They were a *little darker than required*, and on going into Mason's toning bath the faces vanished altogether. With the Company's bath it proved the same.

The other point is that when people suggest things like the india-rubber solution recommended for closing up platinotype paper boxes, they should, for the benefit of country workers, give some place where the same can be obtained, or the recipe in full for making it.—Yours, etc., J. N. WILLIAMS, B.A.

* * * *

EMPLOYMENT OF OXYGEN.

SIR,—The employment of oxygen for the limelight and other purposes has increased enormously since the commercial introduction of the Brin method, by which the gas is separated from atmospheric air by a now well-known process. The gas so obtained is practically pure, analysis showing that as now supplied by the Brin companies it contains, on an average, 95 per cent. of oxygen, the remaining 5 per cent. consisting of inert nitrogen.

The success of this comparatively new industry has been so marked, that, as a natural result, competitors, with rival processes, have come forward. Some of these met with failure at an early stage of their career, but others are supplying oxygen to the public. This is by no means a state of things to be deplored from the consumer's point of view, if the product from the one source is as good as the other, for benefit generally arises from healthy competition. But when the rival product turns out to be not oxygen, but a half-and-half mixture of oxygon and air, with a slight excess of the latter, the competition is of a decidedly unhealthy character, and is correspondingly bad for the consumer. I recently obtained a sample of gas from a dealer, which on testing (with a Hempel absorption pipette charged with metallic copper and ammonia) I found to be a mixture containing only 60·6 of oxygen. I next tested the illuminating value of this

highly-diluted oxygen with a limelight jet, and, for sake of comparison, placed by its side a precisely similar jet supplied with Brin's oxygen, and, as might have been expected, the light given by the former was little more than one-half as intense as that afforded by the latter. With the good oxygen the lime was quickly pitted, whilst the other showed no symptom of destruction. It is also to be remarked that the consumption of the diluted gas is, for a given period, about one-third more—striving with both jets to get the best possible light—than that of good oxygen. On the same principle, a mountaineer at a high altitude will pass more (rarefied) air through his lungs in a given time than he will when he is in the valley breathing that which contains the normal quantity of oxygen.

As this matter is of great importance to many workers, I trust you may be able to find room in your valued publication for these words of necessary caution.—Yours, etc.,

T. C. HEPWORTH
(Author of "The Book of the Lantern," etc.)

* * * *

A NEW SOCIETY FOR HARRINGAY.

SIR,—I should esteem it a favour if you will make it known through your columns that a photographic society is about to be formed in Harringay. All who wish to join should apply to me, from whom all particulars may be had.—Yours, etc.,

8, Cavendish Road, N. C. FRITH.

* * * *

SPEED NUMBERS.

SIR,—A reply to one of your correspondents in your issue of 2nd inst. gives the following rapidities of our plates :—

Ilford White Label ..	25.
Ilford Iso. medium ..	30.

figures which, we understand, are copied from Mr. Watkins.

Now, without caring to enquire what these figures mean intrinsically, we desire to say that they are absolutely untrue relatively, and we beg users of our plates to discredit entirely any speed numbers which may be applied to them by any one, and to rely only on our published details of relative speeds, which are founded on a long experience, and not on one or two experimental tests.—Yours, etc.,

Ilford, London, E. THE BRITANNIA WORKS CO., LTD.

* * * *

LANTERN SLIDE CARRIER.

SIR,—I must claim space in the AMATEUR PHOTOGRAPHER to reply to Mr. R. W. James' indictment against me of infringing his patents in lantern-slide carriers.

In a footnote to his letter, you yourself say you think Mr. James has the prior claim. *Were* my carrier the same in principle and construction as his, I should not attempt to deny this, as his later patent (and the *only* one which bears upon the subject) appears to have been lodged in January of the present year, whereas my application was only filed in October.

But, as Mr. James is well aware, and as you, Sir, should have observed when examining his carrier, our two inventions differ entirely in every essential feature ; and in proof of this I enclose photographic copies of the specification drawings of each, which I think conclusively show that my patent is *not* an infringement of Mr. James' patent.

Mr. James' letter, I am afraid, implies an accusation against me of deliberate and wilful infringement. Even if my carrier *was* an infringement (which, of course, I assert it is *not*), I could not possibly have wilfully or intentionally copied, imitated, or derived any aid or idea from his invention, for the simple reason that when I protected my carrier I had not the faintest notion that there had ever been a carrier invented with *any* form of *automatic* slide-raising or ejecting contrivance (I now find, by the way, that there are several in the market). Indeed, the specification of Mr. James' 1635 patent has not *yet* been published, nor (so far as I am aware) has the carrier actually been put upon the market, and it was not until yesterday that by the courtesy of Mr. James's patent agents, who gave me a sight of the drawing of his carrier, I learnt what the features of his invention were.

Mr. James, I am sorry to find, has been attempting to injure the sale of my carrier, by threatening my London agents, but I beg to inform dealers who are selling or wish to see my carrier, that they run no risk, and I am willing to undertake all responsibility in any action Mr. James may think fit to bring.—I remain, yours faithfully, C. C. VEVERS.

Leeds, December 10th, 1892.

THE HACKNEY PHOTOGRAPHIC SOCIETY TROUBLE.

SIR,—Enclosed please find copies of further correspondence between Mr. J. E. Austin and myself.—Yours, etc.,

J. O. GRANT.

(Copy.)

"Dear Sir,—Unless I receive immediately the silver medal awarded to me for my slides, "proceedings" will be taken to recover the same.—Yours, etc., (Signed) JOHN E. AUSTIN.

"West Court, Detling, Maidstone,
"December 9th, 1892."

"John E. Austin, Esq.,—Dear Sir,—I beg to acknowledge the receipt of yours of the 9th inst., and to inform you on behalf of the Committee that the solicitors acting for the Club in this matter are Messrs. Renstead and Sharpe, 1, Finsbury Square, E.C.—Yours, etc., (Signed)J. O. GRANT.

"December 12th, 1892."

* * * *

EXHIBITIONS AND MEDALS.

SIR,—The plan proposed by Mr. H. Harvey-George in your issue of December 9th, has been tried and failed. About three years ago an exhibition was opened and the public were asked to vote. On the visitors entering the rooms, printed voting papers were handed to them which they were to mark with the numbers corresponding to the pictures they thought best, and to put these papers into a sealed box on leaving. It was found that many of the visitors recognised the work of their friends and voted for them regardless of the merits of their photographs ; moreover the exhibition remained open for several days, and some of the public voted more than once for their friends' pictures. Comment is unnecessary.—I am, yours, etc.,

A. A. MANTELL, M.D.

SIR,—As I have never exhibited a picture, I possess but little knowledge of the working arrangements of an exhibition, but I should hardly think the proposition set forth by your correspondent, Mr. Harvey-George, *re* the judging of pictures, will find much support. He may be right about the verdict of a single judge, but when there are three or four judging, it is hardly likely they would all give the preference to a certain colour or style of a photograph. When he says that the best picture is the one which pleases the greatest number of people, and therefore the public who visit the exhibition should be the judges, I cannot agree with him. Because a picture is pleasing to look at, it does not follow that it possesses artistic merits. I have heard a person say, "I like such and such a picture, it is such a pretty bit, this waterfall or that bend in the river is so beautiful," without any idea as to whether such portions of a picture lend themselves in a fitting manner to the picture. Some so-called pretty bits—take a landscape, for instance—will have an enormous oak tree right in the foreground, standing out in a very obtrusive manner, the foliage of the tree as black as your hat, and perhaps the top of a hedge showing, with briars measuring one-eighth of an inch across ; the rest of the composition, if it may be so called, looks pretty, but taking the picture as a whole, what a monstrosity it is ! I feel sure that, if the mode of judging has to be changed, it must take a form different to that which has been put forward by your correspondent.—Yours, etc., P.

* * * *

SOUTH LONDON PHOTOGRAPHIC SOCIETY.

SIR,—I only propose to reply to two points in the letter signed "Young Member" in your last issue, as it deals mainly with matters which are not of general public interest, but such as should be dealt with by the committee of the society.

When the judges came to the exhibition I furnished them only with particulars of the various classes, and the numbers of the pictures entered for competition in each of them, and with this information they proceeded with their work. It was not until after the judging had been completed and the awards signed that copies of the catalogue were handed to the judges.

With reference to the showing of lantern slides, no distinction was made between any of the competitors, and if any of the pictures remained on the screen longer than others, the delay arose simply from the time occupied in finding and handing up to the operator the next set, the adjustment of the limo and matters of that kind.—Yours, etc., CHAS. H. OAKDEN

(Hon. Sec.).

How to Make a Set of Photographic Apparatus.

By H. J.

(*Continued from page* 368.)

Chapter XII.

THE RUBY LAMP, ETC.

I INTEND to devote this, the last chapter of the series, to various small, though at the same time very necessary articles for use in the dark-room and also for printing purposes.

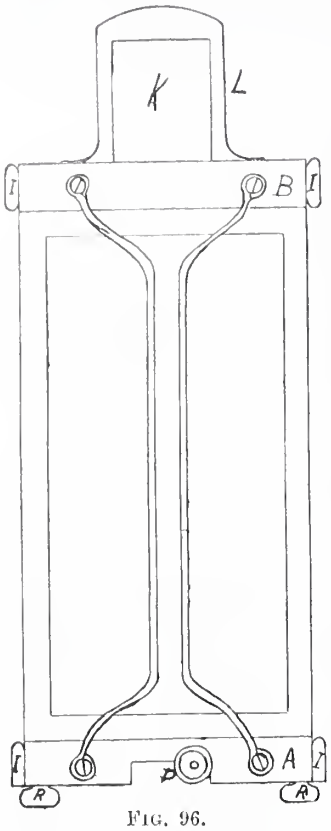


FIG. 96.

The first of these is the ruby lamp. At first sight it would seem that there is an abundance to choose from in the market, at prices to suit all; but what I am aiming at, and have been throughout the series of papers, is to enable any one to obtain a superior article for the same price as a cheap one would cost if bought at a dealer's, and I trust I have been successful so far, and I think I can say that the ruby lamp which is about to be described will not prove an exception.

The following sizes are for a lamp 6 in. square and 10 in. high, exclusive of ventilator in top; if larger or smaller is required, the sizes of materials must be varied accordingly. The bottom and top will be made of wood, and the sides of tin, with a piece of ruby glass in each, thus giving a chance of having four different colours if necessary.

Now for the bottom and top (A and B, fig. 96), which must be made first. Cut out two pieces of 1 in. stuff (any kind of wood will do) 6 in. square; plane up the angles perfectly true, then at $\frac{1}{8}$ in. from the outside all round, cut a fine saw cut about $\frac{1}{4}$ in. deep (see fig. 99, C being the outside of top—or bottom, as they must both be alike so far—and D the saw cuts). Now in one piece cut out a 4 in. circular piece out of the middle (this is for the bottom) and out of the other (the top) cut a 2 in. circle. The top is now finished, so we will proceed with the bottom. On the circular piece which is cut out screw four small brass plates, as at E, fig. 97, then place the piece in the same position as it was before cutting out, and mark where each plate comes; cut out these notches in the outside piece, so that the circular piece will pass through easily. The tin sides must now be prepared. I find the best material for these to be the black or chocolate ferrotype plates; these are sold in sheets 14 in. by 10 in., so that the width is just right for the height of lamp, and by cutting 2 in. off the length of two sheets, it will come just right that way. We require two pieces to go round, one fitting in the saw cuts, and the other tacking round outside of top and bottom. We will make the outside first.

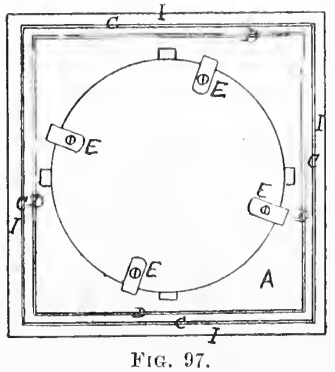


FIG. 97.

Take one of the sheets, now 12 in. by 10 in., and mark off $\frac{3}{4}$ in. from each end, and also $1\frac{3}{4}$ in. from each side, then

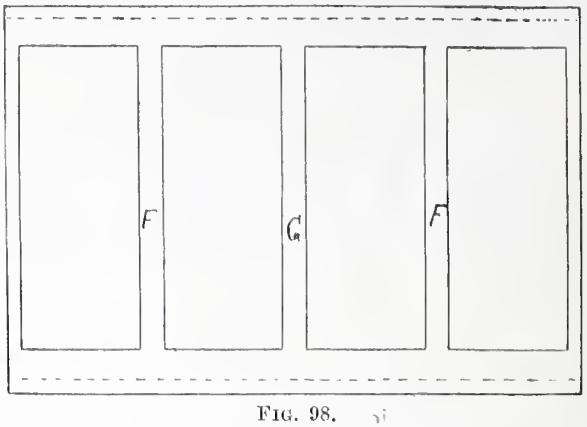


FIG. 98.

mark again $5\frac{1}{4}$ in. from each end. This shows two oblong pieces $4\frac{1}{2}$ in. by $6\frac{1}{2}$ in.; these must be cut out, and one more sheet must be done in the same way. The two sheets when laid end to end will now present the same appearance as fig. 98, the joint of the two being in the middle of G. Each sheet must now be bent at right angles down the centre of F; to do this, lay the sheet on a piece of hard wood, the edge of which comes to the place where the bend is to be, then lay another piece of wood on the sheet, keeping its edge exactly over the other, press heavily on them with the left hand to keep them from slipping, and bend the sheet down with the right hand, knocking it flat against the

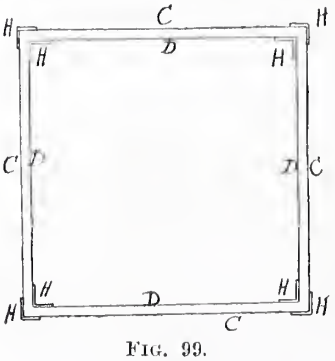


FIG. 99.

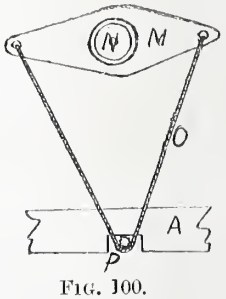


FIG. 100.

bottom piece of wood with a mallet; the angle will then be straight and true.

If made to the measurements I have given, the two pieces should just fit round the top and bottom, and the edges of each should meet at the opposite angles.

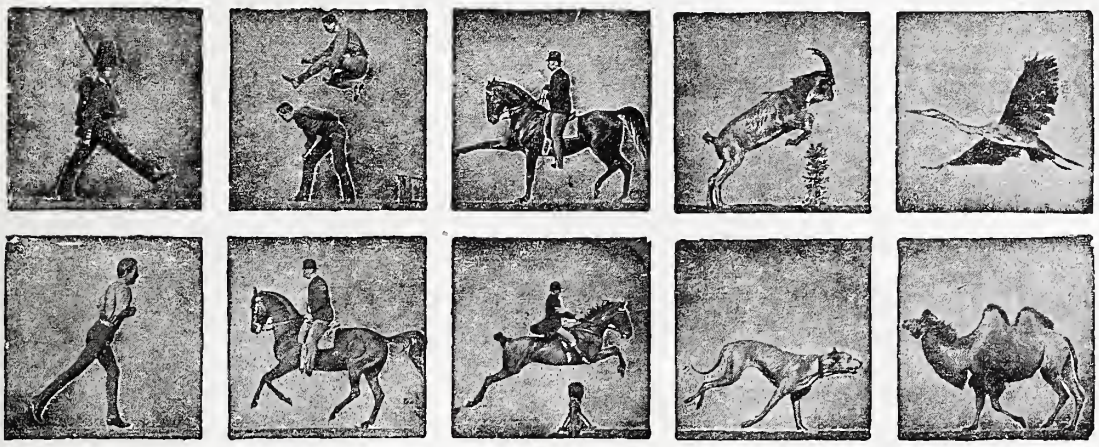
Two more sheets must now be done in the same way, but as they will fit in the saw cuts, the margins must be so much smaller; the exact measurements can be taken from the saw cuts, bringing the angles together in the same way as before. Now make eight angle pieces $\frac{1}{2}$ in. each way as at H, fig. 99; these must be 10 in. long, and they fit inside the inner rim, and outside the outer as shown; by using these there is no need to solder the angle joints, and they

THE LATEST SCIENTIFIC NOVELTY

(ANSCHÜTZ TACHYSCOPES).

Amusing and Instructive.

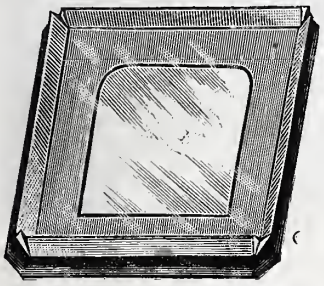
EVERYONE INTERESTED IN PHOTOGRAPHY SHOULD HAVE ONE AT ONCE.



Price, including Stand, Box, and Ten Examples as above, 5s. 6d. each.
Larger Size of same with Five Examples at 35s. each.

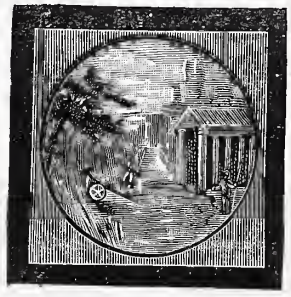
The "Blackfriars" Combined Lantern Mask and Binder.

(PATENT APPLIED FOR)



This is undoubtedly the latest novelty and most complete article of this description, and will enable the most inexperienced amateur to Bind his Lantern Slides without any trouble. Having simply to put the Masks between the slide and cover glass, wet the edges, and turn them over all round, which completes the operation.

Boxes containing 36 One shilling.



LANTERN SLIDE BOXES, COVER GLASSES AND SCREENS.

If unable to obtain from your Dealer, please apply direct to us :—

THE BLACKFRIARS PHOTOGRAPHIC AND SENSITISING CO.

SOLE LONDON AGENTS

For Messrs. Walter Griffiths & Co.'s Hand Cameras, Lantern Slide Cameras.

ALSO SOLE AGENTS FOR

ANSCHUTZ CAMERAS, ANSCHUTZ TACHYSCOPES,

Congress Lens and Purse Cameras.

NEW ILLUSTRATED LIST OF LANTERNS, etc., and our NEW ILLUSTRATED CATALOGUE, containing 300 pages, profusely illustrated, also ILLUSTRATED LIST OF FANCY FRAMES, for the Season, post free on application. **LIBERAL TERMS TO DEALERS.**

WORKS AND OFFICES:—

1, Surrey Row, Blackfriars Road, London, S.E.

"Books think for me."—Charles Lamb.

PERCY LUND and CO.'S PUBLICATIONS

Can be obtained from any Photographic Dealer at Published Price.

Xmas Annual of the "Practical Photographer."

This new and unique production consists of an artistic large quarto portfolio, containing eight choice studies, reproduced from photographs, and printed on antique plate-sunk cards. A leaflet with a short description of each of the studies is included. These pictures adapt themselves either for framing or for a place on the drawing-room table. The Annual would form a most appropriate Christmas present. Price 1s., post free 1s. 3d.

The studies are by the following artists: Harold Baker, S. N. Bhedwar, W. J. Byrne, Thomas Scotton, F. M. Sutcliffe, W. Ethelbert Henry, Richard Keene, Robert Slingsby.

☞ As the edition is positively limited to 2,000 copies, orders should be placed at once to avoid disappointment.

"Certainly it would be difficult to imagine anything more chaste or handsomely artistic."—*Blyth Examiner.*

The whole stock just purchased from Mr. J. WERGE, who has retired from business. Reduced from 5s. to 3s. 6d.

The Evolution of Photography.

By JOHN WERGE.

With a Chronological Record of the Discoveries, Inventions, etc. Contributions to Photographic Literature, and Personal Reminiscences extending over forty years. Illustrated with ten collotype portraits. Neatly bound in cloth. 312 pages. 3/6; post free, 3/9.

"The book is full of interest, even for the general reader."—*Graphic.*

"Mr. Werge has now placed the recollections and experience of forty years in connection with the art in the form of a book, which rejoices in the title given above. His personal reminiscences of the earlier days of photography are extremely interesting reading, and as with them he combines other information relating to the founders of photographic art, the book forms practically a history of photography."—*Photography.*

The opportunity of purchasing this well-written, useful and standard book at a reduced price, ought not to be overlooked by any reader of photographic literature.



JOHN WERGE.

FOUR STANDARD BOOKS.

The Amateur's First Handbook of Photography.	The Practical Photographer.	Photography as a Business.	Photo Mechanical Process.
6d.	Vol for 1892.	1/-	5/-
Post Free, 7d.	2/6 Post free, 2/10½.	Post Free, 1/1½.	Post Free, 5/3½,

SPECIAL NOTICE.

We supply the Trade with our own Publications and those of other firms on the best terms, Parcels of Weeklies, Monthlies, etc., made up and forwarded without charge for collecting or packing.

Publishing, Wholesale and Export Bookselling Warehouse:
MEMORIAL HALL, LONDON.

Printing Works and Chief Offices:
16, 18, & 20, ST. JOHN STREET, BRADFORD.

add to the strength of lamp as well, and they are easily made in the same way as the other angles are turned.

The outside rim can now be nailed on to the bottom, fixing the angle pieces at the same time; then push the inner rim (I forgot to mention that this should be made narrower, as shown by dotted lines in fig. 98) down into the saw cuts, and the angle pieces inside it: slide in the glass, which must be cut large enough to fill up the space all round, and then fix on the top. This is best done with screws, in case the glass gets broken at any time. Now fix a small bead round top and bottom to cover the nails and screws which will fix lamp together (see I, figs. 96 and 97).

The ventilator can now be fixed on top; this is simply two pieces of ferrotype plate bent over as shown, one at right angles to the other, so as to admit the air to pass, but at the same time prevent any light from showing. The inner piece K should be about 3 in. wide, and the other piece L about 4 in.; they will then effectually stop the passage of light. The handle of lamp is formed of two pieces of wire fixed to top and bottom, as shown in fig. 96, and bent so as nearly to come together, and also so as to stand out about an inch from glass. This is better than having the handle at the top, as the latter is liable to get hot when in use. If candles are to be used the lamp is now finished, but I like a lamp myself, so I will make it complete for those who think as I do.

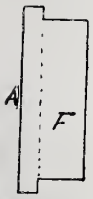


FIG. 102.

The lamp must be fixed to the circular piece which was cut out from the bottom, and as it is often required to raise or lower the light, I show an arrangement for that purpose in fig. 100. A piece of wood M is fixed on the wick regulator of lamp N, to which is fixed a string O, which passes under a short pinion P, which is fixed in a slot cut out for it in circular piece; the head of pinion projects beyond the sides of lamp, the bottom having a slot cut out to accommodate it. The lamp being fixed to the circular piece, the outside can be placed right on over it, the brass plates E passing through the slots made for them. The circular piece with the lamp on it can then be pushed round to the position shown in fig. 97, when the plates will

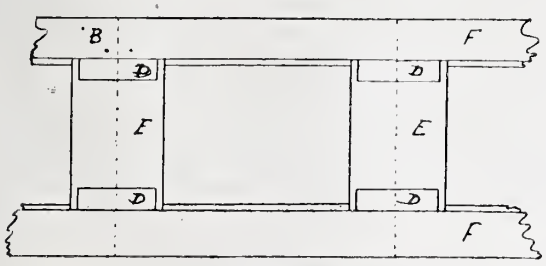


FIG. 103.

hold them together. The slot for pinion in lamp bottom must be made large enough so that the pinion can be used as a lever to fix and unfix the movable bottom. The four slots will admit the necessary air to feed the lamp, and small feet R must be fixed on the bottom to allow the air to pass through them.

The following is a list of the necessary fittings, with prices of same:—

	s.	d.
Four ferrotype plates, 14 by 10	1	6
Pinion to regulate lamp	1	0
Four small brass plates for movable bottom ..	0	3
Wire for handles	0	2
Ruby glass, cut to size (four pieces)	2	0

How to make Printing Frames.

These very necessary articles can be bought very cheaply,



FIG. 101.

and at first sight it seems as though it would hardly pay to make them, neither would it if only one was required; but as everyone requires half a dozen at least, by making them all together the game can be made to pay for the candle. The following measurements are for six quarter-plate frames; if half plate are required the sizes must be altered accordingly.

For materials we shall require a piece of some kind of hard wood, 3 ft. long, 2 in. by $\frac{3}{4}$ in.; this must be planed up square and true on all sides, and rabbetted on each edge as shown in fig. 102. It must then be cut out in trenches as shown in fig. 101, the trenches being cut out of the widest side, or that marked A, fig. 102. When setting out the trenches, first square off one inch at each end, then four inches, then two inches for trench, and so on till the other end is reached, when it should come for another inch as when starting.

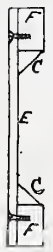


FIG. 104.

The inch pieces at each end must now be cut away, also all the two inch spaces, into the depth of widest part of wood, as shown by dotted line in fig. 102, after which the piece must be sawn down the middle lengthways, making two pieces of equal size, 1 in. by $\frac{3}{4}$ inch.

Now prepare six pieces of the same kind of wood as the other, 5 in. long 2 in. by $\frac{1}{4}$ in. It will be best to prepare them in one length and cut them off after; one of them must be sawn in two, making it into two pieces 1 in. by $\frac{1}{4}$ inch. These two pieces must be screwed into the end trenches of the long pieces, keeping the latter exactly 3 in. apart or $3\frac{1}{4}$ in the rabbets, which must be placed inside just opposite to the way they were before the piece of wood was sawn in two. The 2 inch pieces can now be glued and screwed into the remaining trenches, using four screws to each end and keeping them away from the middle as shown at B, fig. 103, where the dots show the position of screws, the heads of course being at the other side to that shown. We now require about 2 ft. of wood of the section shown at C, fig. 104; the best way to make it is to plane up a piece 12 in. long, $\frac{1}{2}$ in. square, and then saw it down diagonally, and then take a shaving or two off the rough; cut these pieces into $1\frac{3}{4}$ in. lengths,

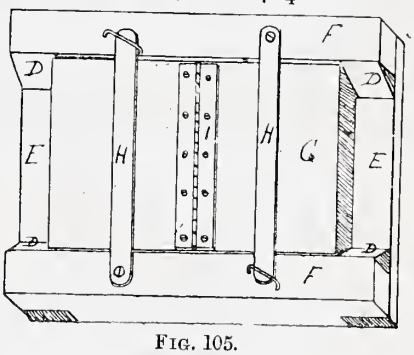


FIG. 105.



FIG. 106.

and glue one into the rabbet in the middle of each cross piece at each side, as at D, fig. 103; shorter pieces of the same must also be glued on the narrow cross pieces at the ends in the same way.

While the glue is drying, the backs can be prepared. For these we require a piece of $3\frac{1}{4}$ in. by $\frac{3}{8}$ in. hard wood, 2 ft. 3 in. long; this must be planed up true and level all round, and then cut into lengths of $2\frac{1}{8}$ in., cutting them all square and planing the ends. They can then be hinged together in pairs, using one hinge for each long enough to reach across; this will be found better than using a pair of small hinges, and it costs no more.

There are also frames in the market with the back cut across near one end, the object being to allow more of the picture to be examined during printing; but it is only a fad, and it has more disadvantages than advantages, so I stick to the old-fashioned plan, which I believe to be as good as any. The glue will no doubt be dry, so that the frames can be cut in pieces, which must be done through the middle of each wide cross-piece, as dotted lines, fig. 103. They can now all be trimmed up and the sharp corners taken off with the plane, with a finishing touch with sand paper, and the frames may be called finished, with the exception of the pressure springs; these must be screwed on to the sides (one on each) at about the middle of each half of back board, and a wire staple inserted diagonally in the other sides, so that the end of spring will slide under the staple and be held there firmly.

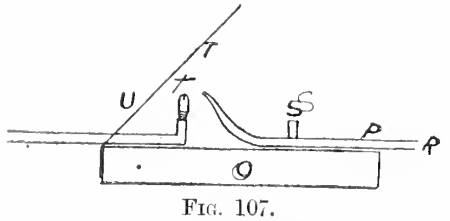


FIG. 107.

A sketch of printing-frame complete is shown in fig. 105, all the parts being lettered for reference.

I think that all who have followed this paper will agree that it does pay to make printing frames at home, cheaply as they can be bought, the fittings costing a mere nothing, the wood ditto, and as for time occupied in making, it is not much more than has been taken up in writing this paper.

List of Fittings for Printing Frames (Six).

	s.	d.
Six 3-inch hinges for backs	1	0
Six pair springs with staples	1	0

ECONOMICAL DEVELOPING TRAY.

All who wish to study economy by using as little developing solution as possible, should make a tray as follows, in which the plate itself forms the bottom; this will be found to save about two-thirds of the solution, as the whole is kept on the negative, whereas in the trays in ordinary use the greater part runs under the plate on the bottom of tray. Make a block of wood, as K, fig. 106, $5\frac{1}{4}$ in. by $4\frac{1}{4}$ in. by 1 in. thick; rabbet it all round for half the thickness as shown, so that the top is $4\frac{1}{4}$ in. by $3\frac{1}{4}$ in. (this is for quarter-plate; for half-plates, etc., the blocks must be varied in size accordingly). Now make a frame of $1\frac{1}{4}$ in. by $\frac{3}{8}$ in. wood, $4\frac{1}{2}$ in. by $3\frac{1}{2}$ in. inside; the sides of this are shown at L, fig. 106. When this frame is placed on the block, it will be level with it all round outside. Now all round the inside of frame fix rabbetted india-rubber moulding as at M, fig. 106 the thick part upwards as shown. The thin part of this moulding is one-eighth of an inch thick, and the thick part a quarter of an inch, so that it leaves an eighth of an inch rabbet all round. The rabbet of moulding should rest on the top of block, when the bottom of frame (L) is resting in the rabbet in block. A small hook and eye should now be fixed on each side of block and frame, so as to fix them together; these are shown at N, fig. 106. Now to use the tray place the exposed plate on top of block K and pass the frame L over it, so that the rabbet in india-rubber moulding rests on film of plate, then press frame down and fix with hooks and eyes. The tray will now be found quite water-tight, the india-rubber making a good joint. Films and bromide paper can also be developed in a tray of this description much better than in any other, as it is kept perfectly flat during development.

List of Fittings for above.

	d.
India-rubber moulding, per foot	8
Hooks and eyes, per pair (two hooks and two eyes)	$2\frac{1}{2}$

A SIMPLE FLASH LAMP.

No outfit is thought complete without a flash lamp now, so I have included one in these papers. It is very simple and easily made, and at the same time perfectly effective, and answers its purpose well. O, fig. 107, is a block of wood about 6 in. by 3 in. and 1 in. thick. On this is fixed a piece of brass tubing P, which is connected with an india-rubber tube and ball at R, the other end being bent upwards so as to stand about $1\frac{1}{2}$ in. off the block, and is also flattened out so that the round bore of the tube is turned into a long slit. A short piece of tubing is also soldered into it at S as shown, to which a cork must be fitted. At the other end of block must be fixed a piece of gas-pipe, which is turned up and fitted with an ordinary burner T, the latter being fixed about half an inch from the flattened end of brass tubing. Now cut out a piece of tin of the shape shown in fig. 108, and fix it on the end of block over the gas-pipe, bending it forward, as shown at U. This finishes the lamp, and now for the method of using; first connect the gas-pipe with the nearest bracket, with a piece of india-rubber tubing, then place a small quantity of magnesium powder in tube S and cork it up tightly, light the gas at T, and press the india-rubber ball.

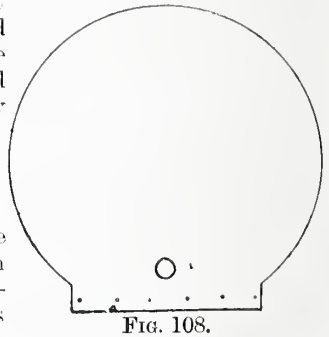


FIG. 108.

The piece of tin U answers two purposes; it spreads the flame so as to give a large surface of light, and it prevents the powder from being wasted by being blown through the flame, thus ensuring a more powerful light.

This finishes the series of papers for the present, and I hope that they may prove useful; they are all quite practical, and if anything has been passed over too lightly I shall be happy to explain it more definitely if my attention is called to it, and by permission of the Editor I hope to have the pleasure of writing for these pages again in the future.

REFERENCES TO LETTERS.

FIGURES 96 TO 100.

A. Bottom of lamp.
B. Top of lamp.
C. Outside tin frame of lamp.
D. Inside tin frame of lamp.
E. Stop to hold bottom in.
F. Parts of tin sheet forming corners after bending.
G. Where the two sheets join.
H. Angle pieces.
I. Beads round top and bottom.
K. Inside part of chimney.
L. Outside ditto, at right angles to K.
M. Lever fixed to handle of lamp which raises and lowers wick.
N. Handle of lamp, ditto.
O. String connecting above with pinion.
P. Pinion to work lever M.

FIGURES 101 TO 108.

A. Wide part of wood forming rabbet of frame.
B. Method of screwing in cross-pieces E.
C. Angle pieces (section of).
D. Ditto fixed in position.
E. Cross-pieces of frames.
F. Slides of frames.
G. Backboard of ditto.
H. Springs.
I. Hinge.
K. Bottom of tray (block forming).
L. Frame forming sides of ditto.
M. India-rubber moulding.
N. Hooks and eyes holding K and L together.
O. Bottom of flash-lamp.
P. Pneumatic tube.
R. Connection of brass and rubber tubes.
S. Chamber for magnesium powder.
T. Gas burner.
U. Reflector.

DESCRIPTION OF FIGURES.

Fig. 96. Elevation of dark-room lamp.
„ 97. Plan of bottom of ditto.
„ 98. Sides of ditto before bending.
„ 99. Top of ditto, showing angle pieces.
„ 100. Arrangement for regulating light from outside of lamp.
„ 101. Wood prepared for printing-frames.
„ 102. Section of ditto.
Fig. 103. Details of ditto, showing where to cut, etc.
„ 104. Section of ditto, through dotted lines.
„ 105. Sketch of printing-frame complete.
„ 106. Section of economical developing tray.
„ 107. Elevation of flash-lamp.
„ 108. Shape of reflector for ditto.

Study and Practice of Art in Field Photography—XI.

By A. Horsley Hinton.

CHAP. XI.—CLOUDS IN LANDSCAPE.

We need probably use no arguments to persuade our readers that a plain white blank is quite an inadequate representation of that part of a landscape scene which is occupied by the sky, and we shall presume therefore that we have got beyond the age when it was thought desirable that the upper part of the photograph should in all cases be white, and indeed a "nice white sky" was regarded as a *sine qua non* to a good photograph.

If the direct and independent study and observance of nature had been taught and insisted upon as it should have been, and usually is now, such an error would never have become established. It is an instance of a rule or standard having been arbitrarily laid down, and thus given rise to the multiplication of error.

Look out of doors for a moment, no matter what the scene, and consider what is the relative tone, the respective *value*, as regards light and shade, between the two halves of the scene representing generally the sky and the land. We shall probably conclude that the former is the lighter half, but if we look closer and more thoughtfully we shall in nearly every case find it possible to select some spot, some object in the scene which is brighter and lighter than the sky or any part of it. Any object with a smooth and polished surface, water in some positions, a whitened cottage wall, or any white object in sunshine, a dry dusty path even, in bright light would come lighter than the sky, and hence as, in our pictures, our highest expression of lightness is white paper, it becomes obvious that if we are going to preserve the true relations between the various parts of the picture white must be reserved, as it were, to express the brightness of such objects as we have named, and the sky must fall many tones lower in the scale. Even the bright sunlit edges of the clouds are rarely white, but greys and yellows, and the lighter clouds and blue sky are deeper still, often much lower in tone than the grass fields and heavier rain clouds are darker still.

In representing the sky in our picture so much lighter than it should be in relation to all else, it may be understood that, inasmuch as everything throughout the piece must properly harmonise if the general resulting effect is to be true, the white sky is not only wrong in itself but makes everything else appear false; it will rob the brighter objects of half their brightness, and make the shadows appear deeper and heavier. Without the sky in something approaching correct tone, concord and harmonious effect throughout the scene is impossible. So that this reason alone, though the mere desire for truthful rendering of of physical fact might suffice, will show us the necessity of very carefully studying the sky and clouds which are included in the scene or which we desire to have in our picture. The probability is that after having accustomed ourselves to look at the skies around us a little more intelligently, the student will find cause for surprise that he should previously have been influenced by the conventional ideas for so long; but in the meantime, as a training for the eye and judgment, we should advocate some little exercise and practice; thus, for instance, on every possible occasion, before any scene, ask ourselves the question, what is the lightest object—that is, what object or what part of an object approaches nearest to pure white?

In open landscape, particularly if the character be varied and water be present, we shall rarely find the sky contains the highest light. Having determined the highest light, it would be useful to hold up a slip of white paper so as to contrast pure white with the determined object. Perhaps it will fall rather below the test, often it will surpass it, as the bright glinting light or ruffled water, the edges of shiny leaves, the polished and smooth surfaces of stones and pebbles; these objects, having reflecting surfaces, will appear much brighter than white. But pure white is our physical limit in pictures (and we use the qualification "physical" intentionally, because that by careful gradation and contrast something much more luminous than white can be *suggested*), so we call our highest light white, and then proceed to place the next lightest objects in their regular order and place. By a little practice of this sort we shall accustom ourselves to fix upon the lightest object at once with very little pre-consideration.

Having cultivated the eye, we shall find it much easier to carry into practice what we have learnt, though probably the photographic rendering of tone is the most obstinate foe of the artistic photographer, and the last of a considerable number which still remains not wholly subdued and overcome. Half the battle, however, will be to know *what* we require and know our error when we have made one, and this we can never do unless we constantly study sky and land in their various relationship.

Notwithstanding the advance made in dry-plate manufacture, and even availing ourselves of the various screens, shades, and other mechanical contrivances, still we are very far from always being able to secure the kind of negative we desire, or upon which we think we may reasonably calculate upon obtaining, and it is therefore chiefly in the subsequent processes of printing that errors of the character to which we are referring must be corrected; and whereas, beyond the focussing and arranging the subject on the plate, and the trifling control during development—beyond these, the making of a negative must be admitted to be a good deal mechanical, and gives us less opportunity of using our judgment, and leaves more to blind natural forces, which it has been admitted do err, so the controllable part of the process is that which is under

our hand and eye, and within our power to greatly modify, and as it so largely depends upon our guidance there is the greater necessity for our having so accustomed ourselves to judge between the relative parts of the landscape that we shall at once detect errors of tone, errors of relation, in the print, and know what is required to correct them.

In determining the relative values of objects in sunshine, it is very important, though perhaps not at first easy, to study the objects totally forgetful of their local colour. Hence, smooth, shiny leaves of plants and bushes, although green, are at those points where they catch and reflect the light brighter than white paper. A slate roof in intense light becomes the very palest grey, and the enamelled red ware of which chimneys are made, and which are used sometimes at the apex of the cottage roof, are, when the sunlight strikes them, white, or, glistening brighter still, produce a radiating point of light. The white sails of a yacht and very many other objects will, if seen against the sky, appear lighter than the sky which forms their background; and how if we have our sky represented as white or nearly white, can we show these light objects in relief? It will be excellent exercise to be always on the look out for such a scene, such an opportunity which gives us some object which comes lighter than the sky or clouds beyond, and to endeavour to produce a photograph thereof, accurately preserving the proper relative values of these test objects. By this means we may be surprised to find how deep in tone a clear blue sky is, and how much darker than we had imagined the light rounded cloud masses really are.

On the other hand, it is, of course, exceedingly easy to err in the opposite direction, and exaggerate the depth of the sky and clouds so that they appear unnaturally obtrusive and heavy.

Whilst we have pointed out that unless we are looking directly in the direction of the sun, the *highest light* will usually not be in the sky half of the picture, yet, except in rare cases, the greatest total *volume* of light will be from the sky, so that in printing heavy clouds it should be carefully borne in mind that they must not be so dark as to bring down the total volume of light below that of the landscape. So much then for the necessity of carefully and studiously observing the relative tone of sky, and the scene which with it constitutes our picture.

There is another point from which our skies and cloud effects should be studied, and one which in some of its aspects, we think, has not been sufficiently insisted upon hitherto, and that is the extent to which, quite apart from their lighting, clouds may assist or disturb the general sentiment of the scene. Certain cloud forms are suggestive of certain ideas, and it will be important that those ideas shall not be incongruous with the prevailing sentiment of the picture. Thus the broken masses of drifting wind-blown clouds will better carry out and complete the idea of a breezy marshland scene than the great and solemn forms of stately clouds which rise mountain-like above the tree tops, and, indifferent to the lower air currents, move slowly across our view. In the later day, long bars, rose, gold, and purple, stretch across the sky, and behind them all from bar to bar the sun climbs down; and somehow in this simple cloud arrangement mostly of straight and parallel lines there is something which harmonises with the idea of rest and quietude, something in it suggestive of the pensive evening hour, and through the failing light the weary team is driven home, and the labourers in the field take the homeward path. Bright sunlit clouds of varied shapes, built up and moulded in the warm air, dappled and flecked with the glancing light, constantly changing in form, neither gliding nor hurriedly drifting, but seeming to dance along the clear blue sky, grained athwart all its wide expanse with buff and gold, like floating gossamer, will be in sweet accord with the happy summer scenes of country life, the simple toil of homestead or sea-shore, the brilliancy of all the flowery fields of June, the joyousness of children's sport. Yet if the subject of our picture were to be of a more pensive kind—a solitary way-worn traveller on a lonely road—and we entitled it "Weary," or some such name, we should probably choose that the sky and clouds should be of a more serious mood.

(*To be continued.*)

Silver Printing with Matt Surface.

By J. E. AUSTIN.

THIS was the subject of a lecture and demonstration given by Mr. J. E. Austin before the members of the Maidstone Amateur Photographic Society, of which he is President, on Friday, December 9th. Having for some time, he said, relinquished silver printing with albumenised paper, he had lately, about two years ago, returned to the use of silver as now set forth. Looking round the walls at exhibitions of note, hardly a silver print as usually understood, *i.e.*, with shiny surface, would be met with. The advantages of the paper he brought forward included facility and ease of preparation combined with lowness of cost, added to which was the opportunity of seeing the work as it progressed, the process, in fact, being a print-out one.

He added that he had been experimenting with the process for a year and a half, but had now brought it down to great simplicity, and would proceed to describe it exactly as he used it in his own practice.

To outline this method of printing, the paper has first to be sized and salted, dried, then sensitised, again dried, when it will be ready for printing, after which it is toned and fixed.

Selection of Paper.—Of the many papers tried all seemed to be suitable, but Whatman's not hot-pressed for small, and Whatman's rough for large work could be recommended. Another fine paper for quarter-plate was the plain paper brought out by the Platinotype Company in the sized or unsized condition. With this, sepia tints could be had, and with regard to the tone obtained, with the formula given almost any colour could be produced, as the sizing of each brand of paper varied, and it is chiefly this sizing that governs the tint. It is advisable to cut the paper with a safe edge, rather larger than required. Thus, for 15 by 12's, half an inch margin each way might be allowed.

Sizing and Salting Combined.—

Sodium chloride	5 to 10 gr.
Gelatine (Nelson's)	1 ,,
Water	1 oz.

Place the gelatine in the water and allow to swell for half an hour then put the containing vessel in a saucepan of hot water, stir up with glass rod, and add the salt. A temperature of about 160 deg. Fahr. will be about right.

Although there is sufficient size naturally in the paper, the addition of gelatine is better, as it increases the toughness of the coated surface, otherwise there is some tendency for the image to rub off. The use of gelatine imparts warmth of colour, besides seeming to hold the image better on the surface, but the amount should not be increased beyond that given above, because too much leads to a difficulty in the next stage.

At this part of the process trouble is often met with from a multitude of small air bubbles, causing minute spots, but they can be entirely obviated by using an ordinary shaving-brush; thus, after *immersing* in the salting solution (best used neither too cold nor warm), rub the paper over with the wetted brush, in a few minutes again rub and turn the paper over, take another piece and treat similarly, and proceed till the dish has as many as it will hold.

The sheets after soaking and treating as described are removed and hung up to dry with clips; when quite dry they can be packed away and will keep indefinitely.

Sensitising.—

Nitrate of silver	120 to 240 gr.
Citric acid	30 ,,
Water (distilled)	2 oz.

A certain latitude is possible and desirable; thus for flat negatives the salting bath may contain 10 gr. of sodium chloride, and the silver bath be used weak, viz., 120 gr.; while for stronger negatives, 5 gr. of salt, and silver bath the full strength, will be better, the conditions for success being, that the *stronger* the salting bath

is used the *weaker* must the sensitising one be. For general work, of course, a mean amount would be found to give good results.

The whole success of the process depends upon the way in which the sensitising is done. The silver bath should be filtered into a quarter-plate dish each time any paper is to be sensitised. A strip of swansdown calico 4¼ by 2 in. is doubled lengthways, the long edge of a clean quarter-plate glass placed in the fold, and the calico tied on with string or cotton; this forms an efficient coating brush. Take the sized and salted paper from the store book or portfolio, lay it on a clean sheet of white blotting paper kept for the purpose, and having dipped the brush in the sensitising solution, draw the brush carefully in one direction along the paper, bolding it down by the fingers at the edge, then go over the paper with the brush at right angles to the former way, continually examining the surface by the light *reflected* from a candle, to guard against uncoated specs. Sufficiently cover the surface, but make no attempt at saturation. Hang up, and in about twenty minutes the paper will be dry.

If in packing away, the sensitised papers are laid face to face or back to back, it is important to see that they do not overlap, otherwise marks may subsequently be noticed; if of varying sizes, the face of the smaller piece should be put next to the back of the larger.

The paper can now be printed from, but although not absolutely necessary, it is always best to *re-sensitise*, as this additional treatment ensures the production of good prints. Contrary to what would be thought, the cost is very small, and the paper will keep properly for a month.

In Printing, if the negative has not been varnished, to avoid the *risk* of spoiling by possible staining, a thin gelatine film should be placed between the negative and the paper in the printing frame; printing proceeds as usual, carrying it, however, a little darker than would be the case with ordinary albumenised paper. The prints when ready for toning can be washed or not as may be wished; the subsequent result appears to be much the same. Any toning formula may be used, such as acetate of soda, or borax, or what has proved most satisfactory, a combined toning and fixing bath, the advantage of this latter being that the prints can be taken out when a certain stage of tone has been reached, and then the fixing *completed* in a separate bath of hypo. Great variety of effects are thus obtained.

The Alpha combined toning and fixing bath has been used, but it must not be too strong in gold.

Hypo	2½ oz.
Acetate of soda	½ „
Sulphocyanide ammonium	¼ „
Gold chloride	1 gr.
Water	10 oz.

Hints on Toning.—Only tone one print at a time, and only sufficient solution should be placed in dish to cover the paper. The first print placed in must be removed some time before the desired effect is reached, as a new toning bath is very energetic. The fixing can be finished afterward in hypo.

It may be mentioned that over-printed proofs should be touched in a *new* bath, if under-printed in an old one, the reduction in this case being less.

Defects in over or under printing can be remedied in a way for which it is believed some novelty can be claimed, and by taking advantage of this part of the process when the days are dull, the printing may only have proceeded to a quarter of its normal intensity; in fact, a faint image only be visible, and yet by treatment yield a good print.

In such a case to finish off, place in water for a few minutes and then develop with gallic acid before commencing to tone and fix (saturated solution of gallic acid, about one drop of this to the ounce of water). If dealing with over-printed proofs, reduce by using a *very* weak solution of potassium cyanide. The prints, however treated, of course, after fixing, to be thoroughly washed as usual.

In concluding his lecture, Mr. Austin said he felt sure that if the process was given a trial, carefully attending to the points he had minutely entered into, those using it would obtain as much satisfaction and success as he himself had met with.

Platinum Toning

A. J. LEESON.*

THE great stability of platinum makes it a very desirable agent for the toning of photographic prints, and to Mr. Lyonel Clark we are greatly indebted for the publication of his experiments and formulæ in connection with this process. The chief chemical used is chloroplatinite of potassium, and it is very important to see that this is obtained. It is usually sold in fifteen-grain tubes at a cost of about eighteenpence or one shilling and ninepence each. Apart from the stability which platinum offers, a large number of tones are obtainable simply by watching the toning, and stopping as soon as the desired tone is reached. Almost any tone from brown to black can be obtained, and this is particularly so with prints on the ammonia nitrate of silver paper (particulars of which I gave before this society last spring). I find I get very good results, too, on Edwards's matt-surface silver paper. But the use of ground glass for squeegeeing prints on Solio and other gelatine-chloride papers made these very desirable for printing on, as they tone very easily—far more easily and quickly than with gold toning. The depth to which they should be printed is perhaps a little deeper than with gold toning. When a number have been printed, they are well washed and then placed in the toning bath, which is as follows:—

TONING BATH.

Chloro-platinite of potassium	15 grains
Water...	8 ounces
Nitric acid	3 drops

Each print should be toned separately, and only enough of the above bath should be used at a time that will cover the bottom of the dish, on account of its expense, for after a print has passed through it chemical action is set up, and in a day or so it loses its power. This solution is very energetic, and in some cases it takes less than a minute to tone the print thoroughly. Should there be a part of the print which has not been acted upon by the platinum, if the print is again immersed that part which was untoned will catch up the toned part. After it is toned the print should be thrown into a dish of water, made alkaline by the addition of a few crystals of carbonate of soda or potash. This keeps the whites pure and stops toning at any desired point.

For *warm* tones this bath is too rapid, as these are obtained by stopping toning at any desired point. So that it is well to add to the above formula four times, or more, the quantity of water. This makes the print longer in toning, but enables one to watch the different stages; and when the right colour is obtained throw the print straight into the alkaline water. Several prints can be toned at the same time in this bath.

It is best to print in as warm a tone as possible, especially when warm tones are required, as it is much easier then to see what is going on in the bath. Solio paper, therefore, answers this purpose well. It gives when printed a bright red colour, and tones very easily. Mr, Clark recommends the following bath for all gelatine-chloride papers, and which I find works capitally:—

TONING BATH FOR GELATINE-CHLORIDE PAPERS.

A.—Oxalate potash	2 ounces
Water	12 ounces
B.—Chloro-platinite of potash	15 grains
Water	½ ounce

For Use.

A	3 parts
B	1 „
Water	2 „

FIXING.—After washing, fix as usual for ten minutes in 1 to 5. Always add a little ammonia to fixing bath to make it alkaline.

With gelatine-chloride prints it is well to pass them through alum bath after fixing and washing, to harden the film; they can then be squeegeed on ground-glass if a matt-surface is required, or on crown glass if enamelled surface is wanted. Matt-surface prints can be dried between blotting paper.

* Extract from paper and demonstration before Birmingham Photographic Society.

Reviews.

The American Annual of Photography and Photographic Times Almanac. Wholesale English agent, Jonathan Fallowfield, 146, Charing Cross Road, W.C. Price 2s.

This handsome volume is this year better than ever. It contains more illustrations and more practical articles, and serving as it does as a record of the various methods of working adopted by our transatlantic cousins, it is well worth perusal by everybody. A glance at the author's index, which contains such well-known names as Lincoln Adams, Bothamley, Canfield, Corun, Duchochois, Ehrmann, Romyn Hitchcock, Lambert, Lang, Geo. Mason, Nichol, Pringle, Schumann, Watmough Webster, Clarence Woodman, will at once convince the most sceptical that there are some good writers.

The whole-page illustrations, which are thirty-six in number, include an exquisite Aristotype print, one photogravure, two collotypes, thirty-three process blocks, the latter being printed in that excellence of manner so characteristic of the American magazines. The book will form a handsome addition to any photographer's library, and there is something to be learnt from every page.

Skies in Photographs,

AND SOME

PRACTICAL SUGGESTIONS UPON COMBINATION PRINTING.

By JOHN A. HODGES.

No. II.

In the previous chapter I dealt with the cloud negatives themselves, and the various modes of obtaining them. I shall now endeavour to make clear to the reader the different methods by which such negatives may be used, in conjunction with ordinary landscape subjects, for the purpose of introducing clouds into the composition, by the process known as double printing.

Now, combination or double printing does not limit one to any particular process, though it will probably be obvious that the printing-out processes will offer fewer difficulties to the novice than will those processes in which the image remains invisible until development. In a printing-out process the progress of the work can be observed, and the light action arrested at the proper time, whereas in the case of a development process one has to rely solely upon one's judgment as to the duration of the exposure. First attempts, therefore, should be made upon ordinary albumenised paper, or upon one of the many gelatino-chloride papers now in the market.

Before actually beginning to print, the landscape negative with which the sky is to be united must be carefully examined with a view to determining whether the portion representing the sky, or rather which should represent the sky, is sufficiently opaque to preserve the sensitised surface of the printing paper from degradation during printing. If it be not sufficiently dense to prevent this occurring, it must be "blocked out," which in cases where feathery foliage breaks the horizon is a difficult and somewhat tedious process. To obviate the necessity for resorting to this method, care should be taken, in developing the negatives, to obtain sufficient density in the first instance.

A tube of moist yellow ochre, or burnt sienna (water colour) should be procured. Some of this should be mixed to the consistency of cream, upon a palette or a saucer. The negative should be placed upside down on a retouching desk, or, in lieu of that, though it is a clumsy substitute and one not likely to facilitate good work, held up against a window. A *fine sable* brush is then dipped into the colour, and the outline of the horizon, and any object breaking it, is then carefully followed. This must be done *carefully*, the excellence of the final result depending largely upon the manner in which this part of the operation has been performed. This having been done, and the original outline having been carefully preserved, the remaining portion of the sky may be quickly filled in with a larger brush. I may add that I lay stress upon the employment of a sable brush for the outlining process, because I find with a camel-hair brush it is almost impossible to accurately follow a delicate outline. Those of my readers who use the brush as well as the camera will at once understand what I mean. When the pigment is thoroughly dry the negative will be ready for printing. An alternative method of stopping out a weak sky is to take a very much over-printed proof from the landscape negative, and carefully cut round the horizon with a sharp pair of scissors. The sky mask so obtained must then be very carefully adjusted to the negative and secured in position with gum.

From the negative so treated a print may now be made, and if when the landscape is sufficiently printed no brush marks or other evidence of clumsy manipulation appear upon the horizon, and the portions representing the sky remain white, the work may be considered so far satisfactory.

But before we can proceed to print-in the sky, some method of shielding the already printed portion of the landscape from the further action of light must be devised. There are several ways in which this may be done. I will first describe the simplest, which presents no difficulty at all, its single drawback being that it is only applicable to albumenised paper. Some non-actinic but transparent water-colour pigment is taken (gamboge or crimson lake answers, perhaps, better than any other), and the whole of the printed portion of the landscape painted out, care being observed not to encroach above the horizon or upon the sky, which would produce white markings in the finished print. This will effectually prevent further light action upon the print. All that remains to be done is to select a suitable cloud negative, adjust it to the print, and expose the light until the sky is sufficiently printed.

The actual operation of printing will be much more easily performed if a printing-frame several sizes larger than the negatives to be printed from is employed. A whole-plate frame, for instance, should be used for half-plate negatives. That kind of frame which is provided with a plate-glass bed, but which is seldom seen in the possession of amateurs, is the best for the purpose. The advantage of the large frame lies in the fact that the extra space allows of the easy adjustment of any portion of the sky negative to the view, and the gain in convenience will at once commend itself to the reader.

Although in the foregoing directions I have described the process of blocking out, masking, and printing in, as applied to albumenised paper and other printing-out processes, identically the same system is followed when a development process is employed, but inasmuch as the effect produced is not visible until after development, it necessarily follows that the work will be more difficult. Carbon and bromide will be found most difficult, platinotype being comparatively easy, the image produced by exposure being, though faint, of considerable assistance.

The reader should not be disheartened by early failures, and would do well to remember that success in this kind of work depends solely upon the degree of manipulative skill which he can command. Now a high standard of technical ability cannot be attained in any branch of art without a considerable amount of painstaking application, and therefore he must not expect his first attempts to be the unqualified successes which inexperience might lead him to suppose they would.

It is by no means always necessary to go to the trouble of blocking out and masking as detailed above. With many landscape subjects equally good results may be obtained by far simpler means. Suppose, for instance, the subject be an ordinary open landscape, with a flat horizon, broken, however, by some tall dark poplars standing sentinel like in strong relief against the sky. At first it would seem necessary to carefully follow the instruction already detailed in regard to masking the objects obtruding into the sky, but in practice with such a subject this will be found unnecessary. A print of the landscape is first taken in the ordinary way, a suitable cloud negative is then selected, and the print properly adjusted to it, the landscape portion of the print being roughly masked with a piece of soft cloth, or even a handkerchief, care being taken to mask just up to and not beyond the horizon. No attempt should be made by this method to block or mask the trees which break the skyline, the clouds being printed right over them, for unless the clouds be printed considerably deeper than the trees themselves, no evidence of double printing will reveal itself in the finished print. The handkerchief or cloth should be slightly moved during the actual printing-in of the clouds, in order to lessen the chance of any evidence of uneven printing manifesting itself in the print.

There is another method of introducing clouds, which, *in artistic hands*, may be made to produce very fine results, but which perhaps can hardly be called legitimate photography, and I tremble to think of the indignation which pictures so treated would excite in the breasts of—ahem! our photographic art-critics. To any one who can use a brush—my facetious friends will note that I do not refer to the shaving brush nor to the clothes brush—the method is simplicity itself, consisting merely in painting suitable cloud forms upon the landscape negative itself. It is of course evident that this process is only applicable to negatives with thin skies. Ordinary water colours and sable brushes are all the materials required, but in this case an opaque rather than a transparent pigment should be employed. The painting, for obvious reasons, should be done upon the back and not upon the film itself. If any mistake be made or the effect sought for not obtained, the work can be wiped off with a damp cloth, and the painting commenced *de novo*. The colour is mixed to the consistency of cream upon the palette, a drop or two of glycerine being added to prevent its drying too quickly. A brush charged with colour is roughly dabbed on, and the cloud forms sketched out, the edges and outlines being smoothed and worked down with either the finger or a pad of cotton wool covered with wash leather, in the same way in which the colouring of a lantern-slide is effected. A trial print will determine whether the result be satisfactory or the reverse. The method is not to be commended, as I have already intimated to those who have no knowledge of painting or drawing.

I trust that those of my readers who have not before attempted to introduce clouds into their cloudless landscapes

may after reading the above be induced to make the attempt; the greatly enhanced artistic value of the photographs should be deemed ample compensation for the extra trouble involved.

Apparatus.

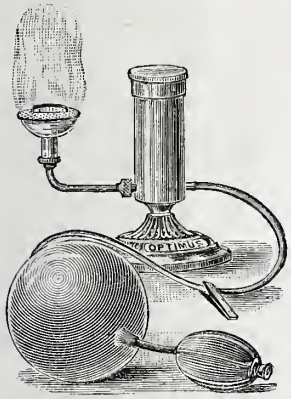
AMIDOL CARTRIDGES.

Messrs. Fuerst Bros., of 17, Philpot Lane, E.C., have introduced the new developer Amidol in small glass tubes, which can be obtained retail for 5d. apiece, and as the contents of each tube can be dissolved in 7 or 14 oz. of water, and the solution thus made will develop perfectly ten half plates, it is evident that the cost of the developer for each plate is only ½d., whilst the developer may be used for more than one plate if desired. This form will be found very convenient for tourists.

THE "OPTIMUS" MAGNESIUM LAMP.

Price 15s.

This the latest form of magnesium lamp introduced by Perken, Son, and Rayment, of 99, Hatton Garden, E.C., is likely to be of great service during the winter months.

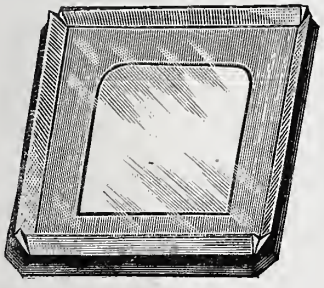


The lamp, as illustrated in the diagram, has an air pump and air reservoir connected with a magnesium reservoir, and a burner which is adapted for burning methylated spirit. By one or two turns of a screw, which releases or compresses the air tube, a continuous flame of extreme brilliancy, and of about 1,000 candle power, is obtained, which obviously is considerably more than sufficient to impress the image of any person or dark room on a plate. The lamp will also be useful for enlarging and reducing, but especially for portraiture indoors during the winter months.

THE BLACKFRIARS COMPANY'S COMBINED LANTERN MASK AND BINDER.

Price 1s. per box.

The Blackfriars Photographic and Sensitising Company, of 1, Surrey Row, Blackfriars, S.E., have introduced





a new combined mask and binder for lantern slides, which will be of great value, and render the operation of mounting slides easier than ever. One has merely to put the masks between the slide and cover-glass, wet the edges, and turn down all round, and the operation is complete. Every lanternist should try these.

ANSCHUTZ TACHYSCOPE.

Prices, 5s. 6d. and 35s. each.

The same firm have shown us the new and larger form of this instrument, which is usually dismissed by the would-be cognoscenti in the words, "Oh, yes, the old zoetrope." It is not quite the same, however, but the pictures used are obtained by Herr Anschutz, and are therefore individually, scientifically, and collectively artistically true. Each series of pictures, a few of which are reproduced in page vii., form a perfect example of animal locomotion, and owing to Christmas holidays, when sometimes one's powers as host and hostess are taxed to the uttermost to provide rational amusement for visitors, this Tachyscope will be found a relief and an amusement both for old and young.

WORMALD'S COMPOSITION METAL CUTTING-BOARDS.

Price from 3s. to 6s. each.

Wormald and Co., Sutton, Surrey, have sent us a sample of the above novelty, which they are placing upon the market. These boards are made of a special composition that will neither turn the edge of the knife nor allow the paper to slip. Besides the advantages of having a good cutting surface, the board acts as a paper-weight for pressing unmounted photos. It is an extremely useful and practical adjunct to the work-room.

Catalogues.

The Thornton-Pickard Manufacturing Company, Altrincham near Manchester.

This catalogue will be of great service to all amateurs who wish to turn out good instantaneous work. It is full of capital hints, and contains some very good illustrations of work done with their well-known shutters.

The special novelties are a new-pattern snap-shot shutter and a new safety blind, which may be fitted to any of their shutters. A new dark-slide recorder is an extremely ingenious and efficient device, which prevents exposing the same plate twice. A simple exposure table is also given, which will be useful to all tyros. Special stress is laid by the manufacturers upon the focal plane shutter, a principle which we have personally held for some time to be the best on which a shutter should be constructed, and the illustrations which are given of work done by this prove that the old bugbear of distortion of image is, as we have always held, utterly nonsensical. A few hints on practical instantaneous work, which are well worth reading, are included. We hope to notice these novelties in detail shortly.

Hand Camera Lenses.

Messrs. Taylor, Taylor, and Hobson have issued a supplement to their list, containing a new pattern hand-camera lens with rack focussing gear. If desired, this lens may be obtained with engraved scale of directions on tube. All the lenses are fitted with the iris diaphragm, which is operated by turning the front rim of the lens.

The following are the foci, prices, etc., of this series:—

No.	To Cover.	Approx. Eq. Foc.	Full Aperture.	Prices.
1	4¼ by 3¼	5 in.	*f*/5·6	£4 15 0
2	4¼ by 3¼	5 in.	*f*/8	3 15 0
3	4¼ by 3¼ *or* 5 by 4	6 in.	*f*/8	4 15 0
4	6½ by 4¾	7 in.	*f*/8	4 5 0

Extra, for engraving focus scale on any of the above, 2s. each.

All the lenses fit the standard 1·75" flange screw. This firm, as is well known, make a speciality of standard screws, for perfecting which they received the only medal at Pall Mall this year.

Photography and the Stars.—Sir John Lubbock says:—"The number of the stars is enormous. When we look at the sky at night they seem, indeed, almost innumerable; so that, like the sands of the sea, the stars of heaven have ever been used as effective symbols of number. The total number visible to the naked eye is, however, in reality only about 3,000, while that shown by the telescope is about 100,000,000. Photography, however, has revealed to us the existence of others which no telescope can show. We cannot, by looking long at the heavens, see more than at first; in fact, the first glance is the keenest. In photography, on the contrary, no light which falls on the plate, however faint, is lost; it is taken in and stored up. In an hour the effect is 3,600 times as great as in a second. By exposing the photographic plate, therefore, for some hours, and even on successive nights, the effect of the light is as it were accumulated, and stars are rendered visible the light of which is too feeble to be shown by any telescope."

Exhibitions.

SOCIETY.	ENTRIES CLOSE.	OPENS.	CLOSES.	ADDRESS OF SECRETARY.
Phot. Soc. India	—	Dec. 1893.	—	Calcutta.
West London	—	Jan. 10	—	Lionel C. Bennett, 30, Blandford Road, Bedford Park, W.
Louth	—	Jan. 26	—	S. Francis Clarke, L.D.S., 8, Upgate, Louth.
Holborn	—	Feb. 18	Feb. 20	F. J. Cobb, 3, Albion Grove, Barnsbnry, N.
Fillebrook Atheneum ...	Feb. 21	Mar. 1	Mar 2	J. W. Spurgeon, 1, Drayton Villas, Leytonstone.
Philadelphia (U.S.A.) Phot. Society	Mar. 15	April 17	April 29	Robt. S. Redfield, chairman, Exhibition Com. 1,601, Callowhill St. Philadelphia, U.S.A.,

Societies' Notes.

THE Hull Photographic Society are desirous of interchanging a loan collection of slides with any other society. Mr. E. E. Cohen, 127, Beverley Road, Hull, will answer all letters.

"OPTIMUS" COMPETITION.

IN consequence of the number of prints which have been received since the extension of the latest date for receiving prints for the "Optimus" £105 competition, we have determined to extend the time to the 31st inst. We need hardly remind our readers that the prizes are well worth having, and the following are the classes:—

1. Landscape, with and without figure. Sub-class A, 7 by 5 and under; sub-class B, 8½ by 6½ and over.
2. Seascape. Sub-class A, 7 by 5 and under; sub-class B, 8 by 6 and over.
3. Portraiture and figure study. Sub-class A, 7 by 5 and under; sub-class B, 8 by 6 and over.
4. Instantaneous work, including also hand-camera work, limited to 5 by 4 and under.

PRIZES.

Apparatus to the value of £15 in each of the following, viz.—Class 1: Sub-class A, sub-class B. Class 2: Sub-class A, sub-class B. Class 3: Sub-class A, sub-class B. Class 4: First prize.

Photographing Snowflakes.—The beauty of snowflakes when they are examined with a magnifying lens is well known. In every text-book of physics one may see drawings of those pretty six-cornered stars spreading their fine feathery branches. But even the best drawings give no idea of the real beauty of the snowflakes when they are examined under a still higher magnifying power. A Russian photographer has now found the means of photographing those images received through the microscope, and thus to fix them so that every one may admire them at his leisure. A thick woollen cloth was spread to receive the snowflakes, then they were rapidly examined, and the prettiest of them were chosen and placed on fine silk muslin under the microscope. A strong electric lamp being used to throw light upon them, their magnified images could be photographed and the most beautiful symmetrical figures, made in the finest imaginable lines, like most perfect artistic engravings, were received in this way.—*Ex.*

The Benevolent.—A committee meeting was held on 5th inst., W. Bedford, Esq., in the chair. There were two applications for assistance, both in money and in finding situations. Both cases had been investigated by the Secretary and by a member of the committee, and the applicants attended and were interviewed by the full committee. In both cases the desired loans were granted. The Secretary reported on the disbursements of the monies granted at the last meeting, and was able to report favourably on the progress of one or two men who have during the past few months been rescued from desparate straits by the Association. The Secretary was instructed to write to all subscribers of the Association who did not subscribe for the present year, asking them to continue their support, as the pressure of the season is being keenly felt by many photographers. The Secretary also reported that certain overcoats and boots which had come to hand had been highly appreciated by men who were in great difficulties, and asked the members present to supply certain other articles of clothing which amongst them they were able to promise.

Societies' Meetings.

Accrington.—The monthly meeting was held on the 7th inst., Mr. Cheney in the chair. Mr. Joseph Barnes gave a very interesting address, "How to make Lantern Slides," which was very much appreciated. Several exposures were made successfully and developed with Amidol, the results attained being very satisfactory indeed. Dr. Clayton exhibited apparatus for making lantern slides by reduction; a novel printing frame (made by the Rev. J. R. Rendell) for making lantern slides by contact; also a magnesium flash lamp, by the aid of which a couple of plates were exposed on the audience and successfully developed during the evening.

Bath.—An ordinary meeting was held on 30th ult., Mr. Austin J. King, President, in the chair. In consequence of the ensuing holiday season, the 21st of December had been chosen for the next meeting; Messrs. Powell and Perren would then give an illustrated account of their trip to Scotland. The various exhibits of the members' work during the summer were then examined. The remainder of the evening was devoted to displaying the slides. The exhibitors included the President, Mr. Austin J. King, Mr. E. J. Appleby, Mr. P. Braham, Mr. E. Lambert, Captain Molesworth, Dr. Norman, Mr. E. E. Peacock, Mr. G. F. Powell, Mr. H. G. P. Wells, and Canon Williams. Mr. Braham showed two photographs he had taken from a balloon, one ascending, altitude 4,200ft., the other descending, altitude 6,000ft., and he gave a brief account of his aerial journey, pointing out that for map work by balloon photography above 6,000ft. from the earth a peculiar fogging or obscuration was manifest.

Blackheath.—On the 29th ult. Mr. A. R. Dresser gave a lecture on "Enlarging," the chair being occupied by Dr. Ernest Clarke. The lecturer said that enlarged prints might be obtained from small negatives either by putting negative in camera and projecting image through camera lens on to a sheet of bromide paper, or by fixing negative in window and taking a positive from it on paper in a large camera, this being the method he used himself and recommended as being productive of the best results. All his own enlargements were made by daylight, as he considered this more satisfactory than any artificial illuminant. He explained that stopping down the lens does not increase the definition for enlarging purposes, though it may sometimes appear to do so. When a stop is used the exposure is diminished, and therefore the print, when developed, may have greater contrasts than one given the same exposure with full aperture, thus giving an effect which sometimes is mistaken for sharper definition. With regard to exposure, to enlarge from a ¼-plate negative of fair density up to 12 and 10 on an ordinary fine day, with stop *f*/16, he would give from three to four minutes' exposure, or, with a thin negative, about two minutes. He considered iron to be the best developer for bromide paper; although, as he generally toned his prints with uranium, he had given up using it, on account of the difficulty of completely eliminating the iron from the print. The slightest trace of iron will cause blue stains in the toning. The developers he recommended were eikonogen and amidol, and he gave the following formulæ:—Eikonogen Developer:—Eikonogen, 1 oz.; soda sulphite, 4 oz.; potass. carb., 1 oz.; soda carb., 1½ oz.; water, 30 oz.; no bromide being necessary. It is advisable to dilute this developer with half water, until you become accustomed to its action. Amidol Developer:—(A) Amidol, 1 oz.; potassium metabisulphite, 1 oz; water, 10 oz. (B) A saturated solution of either washing soda or potass. carbonate. (C) 10 per cent. solution of potassium bromide. For use take A, 1 dram; B, 1 dram; C, 5 drops; and 1 oz. water. Prints should not be cleared until after fixing, to avoid carrying any acid into the hypo. bath. When very rough paper is used it should be well soaked in water before developing, but this paper should only be used for suitable subjects. If print appears to come up too rapidly, from over-exposure, pour off the developer, and turn print upside down in a dish of water, and leave it to develop by itself; it will rapidly gain density without fogging. In the case of a negative in which any portions are either weak or over-dense, it is better to try to counteract these deficiencies by dodging during the exposure than by trusting to local development or reduction. On December 8th a lecture on "The Optical Lantern, and how to Use it," was given by the Rev. W. H. K. Soames, Mr. W. Farrington being in the chair. The lecturer brought with him a very fine biunial lantern, the construction and use of which he fully described. In speaking of the source of light he explained the advantages of the mixed jet over the blow-through jet. The jet being nearer the lime and giving a smaller point of light, better definition is obtained; there is no flame, and very little heat, from it, and it uses considerably less hydrogen. With the blow-through jet coal-gas can be used, but hydrogen gives a better light when it can be obtained. When using these gases the bottle valves must be turned on full and the governors allowed to take the pressure, the supply being regulated by the valves to the jets care must be taken to see that these valves are

closed before turning on the gas at the bottles. He pointed out that when a short-focus objective is changed for one of long focus, the condenser must also be changed to get a good result; to explain this he showed the different effects and sizes of discs produced with different lenses. In lighting the lantern the hydrogen must be turned on and lighted first, and then the oxygen turned on slowly, and both gases regulated until a perfect light is obtained. The lime should be turned every two or three minutes, or else with the mixed jet the flame will double back from the small pit formed in the lime and crack the condenser; it will not do this with the blow-through jet, but the flame from the hydrogen may fork out and set fire to the lantern. With short-focus lenses the light must be nearer the condenser than for long-focus lenses, but with either lens, if it is too near, a dark mark will appear on the disc; the light should be moved laterally or vertically until this mark is exactly central, and then drawn back from the condenser until the mark entirely disappears. After the lecture a number of slides were shown, the disc being thrown upon a blue distempered wall, with excellent effect.

Bolton.—The annual meeting was held on 28th ult. In addition to the transaction of the ordinary business, the council had wisely adopted a diversified programme. There was a paper by Mr. Collier on a summer visit to Brussels, profusely illustrated by lantern-slides. The walls of the rooms were hung with photographic specimens of every kind; the tables were crowded with choice views and stereoscopic slides; and there was also apparatus. In the unavoidable absence of the President, Mr. W. Banks was voted to the chair. Mr. C. K. Dalton, the Secretary, read the annual report of the council. This set forth that the members numbered eighty-one, and they had one of the most successful years in the history of the Society. The finances were in a sound condition. The council regretted that the proposed "survey" of the town had not been actively followed up in 1893. The report was unanimously adopted. The paper by Mr. Collier, which followed, was listened to with much interest. The meeting concluded by a lantern exhibition of the members' transparencies. It may be stated that it is contemplated to hold a public exhibition of the members' work in March next.

Bristol.—On 9th inst. Mr. E. Brightman gave a paper on the speed of modern dry plates and means of finding correct exposure for same. Taking one of the earliest plates on the market, Wratten and Wainwright's ordinary, as roughly about five times the speed of a wet plate, Cadett's "Lightning" plate (120 on Watkins' scale) is twenty-five times as rapid as the usual wet plate. Warnerke was the first to bring out a standard for comparison of speed, but for several reasons his was not accurate. Given the speed of a plate, and an actinometer to test the light, the question of exposure becomes a simple matter of calculation. Only two exposure meters, Watkins's, and Hurter and Driffield's, being founded on scientific principles, had survived, and are coming more and more into general use. Having used Watkins's exposure meter ever since its first introduction, Mr. Brightman finds it a most useful and reliable instrument for every photographer. Watkins's meter measures the actinic value of the light, while Hurter and Driffield gives data for calculating what the value should be. The latter claim that actinic meters are unreliable, as the light may vary in intensity during the time of using the instrument and taking the picture, but this also affects their own table of comparative brightness of light given by their meter. As a matter of fact, this quick variation rarely occurs, and when it does, the photographer would notice it and make a fresh trial. In *interior* work Watkins's meter makes correct exposure an absolute certainty, and if the light varies, the meter (being exposed at the same time) also records the fact. If Hurter and Driffield were to add an actinometer to their instrument it would meet every requirement of the photographer. These new rapid plates give good, dense negatives without any difficulty.

Cardiff.—At a meeting held on the 10th inst. Mr. S. W. Allen experimented with a single dissolving lantern designed by himself. The slide is inserted in a revolving carrier right side up, and a single movement of a small lever places a piece of ground glass in front of the exhibited slide, changes the slide, places another in position, and finally removes the ground glass. The lantern is a very small one, and was worked on an ordinary camera stand, by which great rigidity was secured. Mr. Evans adjusted Scott's Saturator to the lantern, and the result was undoubtedly far superior to the ordinary oxy-hydro light. The peculiar adventures of "Bill Adams at Waterloo," as related and designed by Mr. Allen, brought an enjoyable evening to a close.

Cornish (Camera).—An exhibition of members' work was held from Dec. 5th to 10th, at which a large number of people attended. In addition to the work of members, the club is indebted to the following for loan of photographs:—Bernard Alfieri, A. Horsley Hinton, Mr. and Mrs. S. F. Clarke, The Autotype Co., and the Eastman Co.

Douglas, I.O.M.—Meeting of the above Society on 29th ult, the President, Mr. W. Thomson, in the chair. Mr. W. Harrison gave a demonstration on development with pyro and Amidol, the last proving very successful in bringing out detail, and the members present unanimously decided to give it a trial.

Edinburgh University.—A meeting was held on 8th inst., Dr. Drinkwater, President, in the chair. Mr. Haddow read a paper on "Telephotography," and exhibited Dallmeyer's new lens. Several lantern slides were shown on the screen to illustrate the uses of the lens, and an interesting discussion followed. The remainder of the evening was devoted to a social meeting and smoking concert.

Glasgow (High School).—The society met on 9th inst., Mr. McCall, President, in the chair. After some business, Mr. Turnbull read his essay on "The Chemistry of Light and Photography." The essayist treated his subject in a very thorough manner, and gave his hearers a very lucid account of the action of light on silver salts.

Hackney.—Meeting on 5th inst., Mr. R. Beckett in the chair. The Hon. Secretary presented the Society with a dark-room lamp. Mr. Groese was nominated for membership. This being an evening set apart for slides for the competition, "Hand Camera and Lantern Review," being shown, the usual business of the evening was suspended. Slides were sent in by Messrs. R. and S. J. Beckett, Grant, Carpenter, Barton, Hankins, Taverner, Sodeau, Pollard, Dean, W. Fenton Jones, Hudson, Gosling, and J. Tunston, but the first nine were the selected competitors. The selection was made without the names being made known. The Hon. Secretary announced that next meeting would be set apart for demonstration, by Mr. Walter E. Woodbury, on lantern slides, etc., by printing out.

Hove.—At the meeting held on the 8th inst. Mr. A. H. Webling and the Secretary (Mr. J. Williams) gave a demonstration on lantern slide making. A slide was made by contact and developed with hydrokinone, Mr. Webling showing a home-made box with slide for containing the printing-frame and for making the exposure. The Secretary showed a home-made apparatus for reduction in the camera by daylight. Reduction by artificial light was not found to give good results without a condenser. A lantern-slide was made by reduction in a Cantilever enlarging apparatus and developed with amidol. Two minutes' exposure was given, using Taylor, Taylor and Hobson's D lens, 5 inch focus, *f*/11, from half-plate negative. The lantern plate (Ilford Special) was developed with amidol solution, as recommended by makers, 1 part, water 3 parts, with 2 gr. potass. bromide to the ounce. The result was a very good slide, which developed up rapidly of a good black tone, and without the slightest trace of veiling. The two slides were afterwards shown in the lantern. The members chosen to represent the Club in a forthcoming competition attended with their slides, which were passed through the lantern and the sets to be sent in selected.

Liverpool.—The twenty-ninth annual general meeting was held on 8th inst. From the report of the retiring Hon. Secretary, Mr. F. B. Illingworth, it appeared that the Association had, during the past year, taken the handsome and commodious premises which were now occupied. The new rooms were opened in June last, and although the subscription had been raised in order to provide improved accommodation, the membership had increased and there were on the rolls at the end of the year 309 members. Mr. A. J. Cleaver was elected President in the room of Mr. W. Tomkinson, who retired with a cordial vote of thanks for his successful chairmanship during the reorganisation. Mr. J. H. Welch was appointed Hon. Secretary, and Mr. P. H. Phillips re-elected Hon. Treasurer. The Council were also appointed. Subsequently the President announced the list of the Association awards in the annual competitive exhibition of prints and slides. These were as follows:—Prints, half plate and under: silver medal, Mr. G. A. Carruthers; bronze medal, Mr. F. K. Glazebrook; commended, Mr. T. B. Sutton. Over half plate: silver medal, Mr. T. F. Lloyd; bronze medal, Mr. C. A. Timmins; commended, Mr. H. Holt. Two enlargements: silver medal, Mr. T. B. Sutton; bronze medal, Mr. C. A. Timmins. Stereo slides: bronze medal, Mr. W. S. Ellsworth. Hand camera work: bronze medal, Mr. J. W. Swinden. Exhibits by those who had never won a Society's medal—bronze medal, Mr. G. A. Carruthers; commended, Mr. A. C. Batty. President's prize. Lady members, three prints, Miss Rose Collier; commended, Mrs. Marriott. Lantern slides: silver medal, Mr. H. Holt; bronze medal, Mr. J. H. Welch. The competition slides (twenty-three sets) were passed through the lantern. The collection of prints and slides will be on view at the Association's rooms for a week.

North Middlesex.—On 12th inst., the President (Mr. J. W. Marchant) in the chair, the meeting was chiefly engaged in the nomination of officers for election at the annual general meeting, and other formal business. A discussion took place upon the exhibition, and unanimous approval was expressed at the judges' action in enhancing the value of the certificates by reducing the number of awards to five, as the exhibits to which they were awarded were markedly in advance of the others. It was announced that the first of a series of class meetings for the instruction of beginners in technical matters would be held in the first week in the New Year. The subject had been under consideration by the

council for some time, and it had been arranged that the lessons should be confined to simple technical matters, and that the work should be done by the pupils under the instruction of one of the older members. A limited number of non-members of the Society who are beginners in photography will be welcome at these classes. Application should be made to the Secretary. Mr. J. Stewart exhibited a beautifully made hand-camera, simple in construction and action, which he had recently purchased in America, and Mr. Golding passed round for inspection a number of very fine prints.

North Surrey.—At their last meeting on the 6th inst., the members were particularly favoured by having the opportunity of hearing a very instructive paper by Colonel J. Gale on the production of pictures intended to be shown by means of the optical lantern, and of afterwards seeing the paper illustrated by some of the choicest specimens of this artist's choice work. On the conclusion of the exhibition of slides by Col. Gale, Mr. Harold Senier appropriately showed and explained the uses of a very neat and compact apparatus, which he had designed for the production of lantern-slides from any sized negatives by artificial light without the aid of a condenser.

Photo. Soc. of Ireland.—The ordinary meeting was held on 9th inst., Geo. Mansfield, Esq., President, in the chair. A very interesting collection of slides lent by the AMATEUR PHOTOGRAPHER was passed through the lantern and much admired. The Society's prize slides were also shown. Mr. Ruthven announced that an exhibition of members' work would be opened on the 16th January, 1893.

Rochester (Naturalists' Club, Photo. Section).—The General meeting was held on the 6th inst. Mr. C. Bird in the chair. The following were elected officers for the season 1892-3:—Chairman, C. Bird, B.A., F.G.S.; Vice-chairman, J. Whitfield; Committee, J. C. Boon, J. Hepworth, J. S. Hewitt, P. J. Neate, T. F. Tannabill, M.B., C.M., D.P.H., and R. Watts; Hon. Secretary, J. L. Allen, Clover House, Chatham. It was arranged to have the meetings during the winter, fortnightly, on Tuesday evenings at 8.15 p.m. The first meeting was fixed for December 20th, when Mr. J. C. Boon promised to read a paper on "Wet Plate Process," and to illustrate the same.

Rotherham.—Monthly meeting on the 6th inst., Dr. Baldwin, President, in the chair. The results of the society's (members') competition were announced as under:—Class A., Six untouched negatives (President's prizes), 1, H. C. Hemmingway; 2, G. T. M. Rackstraw. Class B, Three untouched negatives and three prints therefrom taken during the society's excursions, 1, H. C. Hemmingway. Class C (for those who have not taken a society's prize), Four untouched negatives, 1, John Clarke. Four prints, Mr. W. Shephard. This class did not fill, but the Council decided that the awards should be given to Class D., Six contact prints, 1, H. C. Hemmingway; Mr W. Mason was not far behind. Class E., Six lantern slides, 1, E. Isle Hubbard. Mr. Richard Keene, of Derby, was the judge, and he sent some useful and kindly words of criticism. Platinum prints were also shown by the Secretary, and Solio prints by Mr. Hubbard. At the Council meeting held on the following evening the annual exhibition was fixed for February 7th and 8th.

South London.—On 5th inst. ordinary meeting, the President, Mr. F. W. Edwards, in the chair. Owing to Mr. Maurice Howell's illness, his paper on "The Chemical Action of Intensification, with Experiments," was postponed, and in its place a demonstration of enlarging in Cresco-fylma was given by Messrs. Hill, the method of using which has already appeared in our columns. At the conclusion of the demonstration, in answer to questions, Messrs. Hill stated that the process could not be successfully worked with a negative which had been previously varnished. Pyro-developed negatives were not so suitable as those developed with hydrokinone, rodinal, or amidol, the clearing solutions containing alum used with pyro having a retarding action on their solution. They claimed that the process did not produce distortion, and in support of the contention an enlargement of the interior of a church was produced in which the lines were absolutely straight. Enlargement revealed detail which was not visible in the original negative, and a suggestion was made that this property might be made use of in revealing the structure of objects photographed by the means of photo-micrography.

Tunbridge Wells.—The ordinary meeting was held on the 8th inst., Mr. B. Whitrow in the chair, when the Rev. R. W. Atkinson, Messrs. Percy Dau, J. A. Mallett, Chabot, and J. Mann were duly elected members. A discussion took place with reference to the exhibition just held, and the Hon. Secretary's letter to THE AMATEUR PHOTOGRAPHER was highly approved, as at the present time the highest number of members is recorded.

Walsall.—The first of the elementary lectures was given on 6th inst., Mr. J. S. Wilson in the chair. The lecture, by the Rev. Peter Dean, was on "The Camera and Exposure." A most interesting discussion amongst the members followed, and many useful and excellent hints were given to beginners by the Rev. W. T. Corfield, Mr. W. Meikle, Mr. J. H. Day, and others.

Wolverhampton.—At the monthly meeting held on 6th inst. the AMATEUR PHOTOGRAPHER Prize Lantern Slides were exhibited. The pictures were fully commented upon, and some of the sets were greatly admired. Mr. J. W. Evans having resigned his position as Hon. Secretary, the thanks of the society were voted him for his work for the last five years. Mr. James Gale undertakes the duties of Hon. Secretary for the remainder of the current year.

Woolwich.—On December 8th, the Rev. S. E. Chettoe, M.A., in the chair, Mr. John Howson gave an interesting lecture and demonstration on the working of printing-out paper, Major C. D. Davies and Mr. W. H. Dawson taking part in the subsequent discussion. At the next meeting, on December 22nd, at St. John's School, Mr. Arthur C. Baldwin will demonstrate the working of Eastman products.

York.—On 7th inst. a good attendance of members witnessed a successful demonstration of Enlarging by Mr. J. Dickinson, who, by means of a Hume's Cantilever lantern, produced a very fine 10 by 12 picture. An admirable paper on "Art in Photography" was afterwards read by Mr. A. J. T. Ogden, one of the masters at the York Corporation School of Science and Art. Three new members were elected and two proposed.

SOCIETIES' FIXTURES.

Dec. 15.—LONDON AND PROVINCIAL.—Monthly Lantern Night.
" 15.—CAMERA CLUB.—"Description and Demonstration of a New Camera for Taking Photographs of Unlimited Angle." Col. R. W. Stewart, R.E.
" 15.—ELIZABETHAN.—"Rambles," Mr. T. E. Freshwater.
" 15.—OXFORD.—Indian and Colonial Slides.
" 15.—PHOTO. SOC. IRELAND.—"Developing Eastman Films.' Mr. A. M. Geddis.
" 16.—HOLBORN.—Lantern Night.
" 16.—LEWISHAM.—The AMATEUR PHOTOGRAPHER 1892 Prize Slides.
" 16.—CROYDON (Microscopical).—Society of Arts Loan Series of Chicago Slides.
" 16.—UTTOXETER.—"Platinum Printing Process," Mr. S. G. B. Wollaston.
" 17.—LEYTONSTONE.—Members' Lantern Evening.
" 17.—HULL.—Slide Exhibit and Social Evening.
" 17.—ACCRINGTON.—Special Meeting. "Hand Camera Pictures."
" 19.—CAMERA CLUB.—Testing Lantern Slides in Studio.
" 19.—LEEDS.—"Film and Paper Negatives," Mr. A. Taylor.
" 19.—RICHMOND.—Discussion on Enlarging.
" 19.—GLOUCESTERSHIRE.—Members' Lantern Night.
" 19.—S. LONDON.—"Photographic Printing in Colours," Mr. J. Burgess.
" 19.—S. MANCHESTER.—"A Lantern Exhibition without Slides," Mr. W. I. Chadwick.
" 19.—BLACKHEATH.—The AMATEUR PHOTOGRAPHER 1892 Prize Slides.
" 19.—KENSINGTON AND BAYSWATER.—Demonstration, "The Carbon Process," The Autotype Co.
" 20.—NORTH SURREY.—Lantern Evening. Members' Slides.
" 20.—LOUTH.—"Negative Dodging," Mrs. Clarke.
" 20.—BIRMINGHAM.—Social Meeting.
" 20.—W. LONDON.—Technical Social Meeting.
" 20.—HACKNEY.—Colouring Lantern Slides.
" 20.—BRIXTON AND CLAPHAM.—"Granada and the Alhambra." Lantern Lecture, Mr. F. P. Cembrano, junr.
" 20.—ROCHESTER (Naturalists' Club, Photo. Sec.).—"Wet Plate Process," Mr. J. C. Boon.
" 20.—NEWCASTLE-ON-TYNE.—Monthly Meeting.
" 21.—EASTBOURNE.—"Lenses and Exposures," Rev. H. G. Jameson.
" 21.—THE PHOTO. CLUB.—"Amidol and other New Developers."
" 21.—EDINBURGH.—"Amidol, with Modifications." "Desirable Features in Hand Cameras."
" 21.—WAKEFIELD.—"Touching-up and Harmonising Negatives."
" 22.—LONDON AND PROVINCIAL.—Ordinary Meeting.
" 22.—HULL.—P.S.G.B.
" 22.—OLDHAM.—Annual Dinner.
" 22.—WAKEFIELD.—Lantern Entertainment.
" 22.—LEIGH (New Grammar School).—Members' Exhibition, and Lantern Evening.
" 22.—CAMERA CLUB.—"The History of Photography," Mr. W. H. Harrison.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5898. **Hydroquinone Developer.**—Can any reader of this paper tell me bow to avoid getting tbe skies in a negative developed by hydroquinone, eo terribly dense, and consequently losing all cloud effects? Does Beach's potasb developer do better in that respect?—W. F. W.

5899. **Chemicals.**—Would any kind reader give a list of the most deliquescent chemicals used in photography, and greatly oblige?—NOIGNIRCCA.

5900. **Hand Detective Camera.**—I want to make a band-camera with bag, changing box, or dark slides for twelve quarter-plates; also where to procure the fittings, and what lens and shutter? Full particulars will oblige.—S. D. P.

5901. **Painting Bromides.**—How can I induce bromide prints to take water-colour paint? What developer is the best foundation for painting over bromide prints?—POP OFF.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Oct. 28th.—No. 5849.
Nov. 4th.—Nos. 5852, 5854.
,, 18th.—No. 5866.
,, 25th.—Nos. 5875, 5878, 5880, 5881, 5884.
Dec. 2nd.—Noe. 5886, 5890.
,, 9th.—Nos. 5893, 5894, 5895, 5896, 5897.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

J. N. WILLIAMS.—(1) If you wisb to photograph a landscape or scene by moonlight, it is quite possible to do so, and it is advisable to use the most rapid plates you can get, cboose a night near full moon, when there is but little cloud about; the exposure would be about two or three hours. We are afraid it would be useless to try and take anything on an obscured night. The moon should not be included on the plate, as the motion of earth and moon will cause ite image to appear as an elongated streak. You could of course print the moon in afterwards on the printe, making a special exposure for the same on a separate plate of about half second. (2) Sunsets are taken as a rule on ieo p'ates. Beautiful cloud forms, and not colours, must of course determine what to take. Ae at sunset tbe light, especially on the cloude, is generally yellowieh, it ie unnecessary to use a screen, and should it be desired to include any portion of a landscape the screen would do harm, as the shadows are then illuminated by reflected blue light from the sky, and to uee a screen meane cutting that down. The moet successful eunset scenes are taken on two plates, one for the sky with about 1-8th sec. exposure, and the other with longer for the landscape, and both are exposed without shifting the camera in any way. It will be then easy to print in tbe sky. By giving a briefer exposure you can actually photograph the sun itself. (3) Yes, it is by no means difficult to reduce locally with ferridcyanide and bypo. We bad a very valuable paper by Mr. Hodges in the April numbsr of the *Quarterly*, which would help you very much. Working with spirit and chamo's leatber is by no means so difficult ae you imagine. We shall be pleased to see your negatives, and are never too busy to help our readers. Thanke for pointing out slips; they will elip in sometimes, and we are always glad to have suggestions.

E P.—We hope to have a paper this montb on carbon printing. It ie possible to tone any chloride paper with platinum, but the tones are not always pleasing. We have a series of experiments in hand which we hope to publish sbortly. Try the one on p. 295.

J. C. WOLFENDEN.—We have not yet been able to obtain any information about the lenses.

E. H. FORMAN.—Always pleased to help you, and will, if you like, criticise others.

T. G. PARROTT. — Slingsby's "Photography by Flashlight," published by Marion, is tbe only one we know of in English.

C. F. ARCHER.—(1) Certainly, if one process gives you a better result send it in. (2) No, do not use an acid bath, an acid will decompose tbe developing agent.

J. S —Thanks for MS 3.

M. MCISAAC.—Many thanks for suggestion, whicb we will adopt.

W. J. HINCKLEY.—You cannot get over the emell, except by extra attention to cleanliness of the outside of oil reservoir.

J. W. WESTERN. — Try Adams, or Fallowfield, Charing Cross Road, and if you cannot get it there, call on us and we will give you eome.

PERCY HUME.—Letter by post.

E. P. BEITS.—Some of the pages you do not care to keep are considered by other readers as the most valuable in the paper. We could not do as you suggest.

O K. O.—No, it is not necessary to eize the paper first with gelatine; on the other hand, if you do, it stands to reason the sensitising solution muet remain on the surface more. The proces is not more difficult than matt-eurfacs paper.

NOVICE, LEICESTER.—(1) Why not try a pyro developer with sulphite, and keep a cup of acid and water by your side to dip your fingers in? Failing this we should certainly advise you to use Rodinal or Amidol. (2) We will try and let you have some negatives as you ask.

W. PEARSON.—We should say the value ie about £3 or £4, but it is difficult to say without examination.

HIRCUS. — (1) Negative wants intensifying, print flat and poor. (2) Slightly over-printed, and much over-toned. (3) Over-printed and over-toned. (4) Bromide too grey; we should say it was over-expoeed; give less exposure, and add hromide to the developer. (5) Insufficiently developed. (6) Over-exposed. (7) Ditto. When using Rodinal reduce exposure and dilute developer, and add more hromide. Do you want slides and prints back?

A. P.—No, not witbout permission of the publisbers, wbich, as a rule, is easy to obtain.

J. THOMAS.—(1) The best time to pbotograph tbe east window and chancel of a church is in the afternoon when the light is in the west. By thie means there is less chance of halation. (2) Develop witb a very weak developer, that is the ordinary developer diluted with at least twice the quantity of water; allow plenty of time, if necessary an hour. (3) The expoeure would be about one second, we sbould think.

MONA.—Either your lens does not cover well, or else tbe sbutter cuts off some light from tbe corner of the plate. Fleetwood printed too deep, Blackpool ditto; the latter is the better of the two.

J. B.—It is quite possible to etrip your films. Lay the cracked negative on a sheet of glass the same size, tben pour on as much enamel collodion as you can get on without running off the edges. Allow the collodion to eet, then place the negative on the glass in a dish (ebonite or xylonite), containing fluoric acid 1 drachm, water 10 oz., till the film begins to frill and blister, then by the aid of a soft camel's hair brush coax the film off. When quite free remove to a dish of clean water, wbich change two or three times in half an hour. Clean a sheet of glass slightly larger than tbe original, very carefully slip into tbe disb under the film, straighten the latter out by the aid of the brush, raise gently from the water, lay perfectly level, and smootb out by blowing and gentle brushing. We did not recommend mercury and hypo, we may bave recommended mercury and sulphite. You could use Monckhoven's, but you would not have to bleach right through; see answer in last week's Editorial to M. P., for reasons of using different methode of intensification.

J. WHITFORD.—Glad you like the lens. We think in capable hands it will turn out good artistic work.

AMATEUR.—You can only copy postage-stamp to carte-de-visite or carte-de-visite to cabinet by copying same size and then enlarging.

W. R P.—(1) There is no disadvantage in copying prints as you suggest, unless the illumination is unequal. It is advisable to give long exposures so as to obtain all details, and then intensify the negative if required. (2) The metabisulpbite is used to prevent any pyro staining of the film which might otherwise occur.

KADOK.—Your query is inadmissible.

A. MACHEL.—Do not soak your plate in water, and mix your developer as follows:—

Bromide	40 drops.
Ammonia '880	4 ,,
Pyro	1 teaspoonful.
Water	2 oz.

Probably you are over-exposing also. Try giving the correct exposure, and tben write us again.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one** *word; compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, **1,** *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* **2½** *per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* **1s.**

PAYMENT.—*All payments are to be by cheques or Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.,** *or a commission of* **2½ per cent.,** *upon the sale price of the apparatus.*

Cameras, etc.—For sale, a splendid 7½ by 5 camera, made this season for present owner, Honduras mahogany, all latest improvements, double extension square bellows, two double dark slidee, etc., cost £6 10s., price £3 15s.; deposit.—No. 356, office of this paper, 1, Creed Lane, E.C.

Quarter-plate Instanto camera (witb acceseories) by Sharland, new last July, will take 35s. cash; carriage paid on approval; deposit.—Edward Whiteman, 22, Delvino Road, Poole Park, S.W.

Splendid 7 by 5 rapid rectilinear lens, good definition, *f*/8, only 17s. 6d.; camera and few other things, list for stamp.—Cheltenham House, Stroud.

Dark Slides.—Dark slides, five half-plate Instantograph, with quarter carriers, 7s. 6d. each, 6s. 6d. without carriers; and four quarter Instantograph elides, 4s. 6d. eacb, quite perfect; approval.—Thomas, 2, Pelham Road, High Road, Ilford, E.

Dishes.—Porcelain dishes. Two porcelain dishes, 12 by 10, new. What offers?—Charles Firth, Glenhurst, Heckmondwike, Yorks.

Hand-Cameras, etc.—No. 3 Kodak Junior for sale, new. Offers. — E. Phillips, Bridge Street, Leatherhead.

A Major Bruno's band-camera, finder, no lens, sbutter, or slide, 35s.; approval; deposit.—Robinson, Bridgewater Street, Oldham.

Lantern Slides.—One dozen beautiful lantern slides from negatives that have taken five prize medals, 12s. 6d. post free; sample slide, 1s. 6d.—E. Pearce, 76, Church Street, Stoke Newington, N.

Lantern Apparatus.—Pair (Newton's) quaduplex lamps, equal new, 30s., or sell singly.—Iliff, 11, Marmineau Street, Birmingham.

Lenses, etc.—Lancaster's half-plate Instantograph lene and sbutter, nearly new. What offers?—Albert Harris, Sandy Lane, Chorlton cum-Hardy, Manchester.

Whole-plate rapid rectilinear lens, iris diaphragms, flange and cap complete, almost new, 30s.—Apply, H. M., 111, Shakespeare Road, Herne Hill, S E.

Beet French R.R. whole-plate portrait lens, price 40s., or will exchange for half-plate wide angle R.R, suitable for inetantaneous work.—Tonge, Limefield, Ilford.

Mounts.—Quantity Christmas card mounts, all sizes, no reasonable offer refused.—Jarvis, 2, Barclyde Street, Rochdale.

Sets.—Lancaster's £9 9s. enlarging or reducing apparatus with special 3 wick lamp, 8 in. condensers, objective, two half-plate slides, carrier, complete for £6 10s. cash; Lancaster's quarter-plate Instantograph, as new, lens, iris diaphragm, tripod, slide complete, 32s. 6d.; Lancaster's Multum-in-Parvo enlarger for sizes up to 15 by 12, with five carriers, cost £2, take 27s. 6d.—Dunstan, Bull Street, Harborne, Birmingham.

Thornton-Pickard half-plate Tourist camera fitted with revolving turntable and tripod, also revolving front panel, on which are mounted 9in. focus Beck R.R. lens, with iris diaphragm, and Dale's 6in. focus wide-angle R.R. lens, three double backs, also Shew's whole-plate adapter, with two double backs, extra front panel, and Dale's 12 in. focus R.R. lens, solid leather case, etc., all in first-class order, cost over £30. Apply first by letter to B. J. Grover, East Lynn, Woodbury Down, N.

Lancaster's quarter-plate Instantograph camera, lens, shutter, tripod, focussing cloth, two double backs, and sling case, £2; also Griffiths' guinea hand-camera, 10s.—A. Johnston, 54, Underhill Road, Forest Hill, London, S.E.

Sundries.—Collection 100 rare foreign butterflies, in case, 35s.; case 100 foreign beetles, 15s.; exchange in photography.—Gittins, 7, Boulter Street, Oxford.

Beautiful mellow tone violin, in perfect preservation and full size, suit lady or gentleman for solo or orchestral playing, handsome model, with case, bow, resin, mute, tuning fork, and music, take 17s. 6d. lot; special opportunity for obtaining a bargain; bound to please; make very acceptable present; approval.—Miss Francis, 35, Christchurch Street, Ipswich.

Fine toned rosewood zither, perfectly new, will sell for 15s., or exchange for anything its value in photography.—Ernest Smith, Cottages, Norfolk Park, Sheffield.

WANTED.

Burnisher.—Burnisher, small size, must be cheap.—Sewell Brady, Portsmouth Road, Long Ditton, Surrey.

Cameras, etc.—Wanted, good half square camera, cheap for cash, no lens or stand.—C. H., 21, Frances Street, Reading.

Wanted, whole extra special camera (or similar) and one or three slides, in exchange for half new Instanto, with three or six slides, and cash difference, or case, lens, enlarging camera, etc., etc.—Samuel Bartlett, Stratford-on-Avon.

Cameras, Lenses, etc. — Wanted, half-plate camera, second-hand, of good make, R. Rectigraph lens, iris diaphragms preferred, light, compact, must be cheap; deposit; approval.—C. Turner, 79, North Road, Bishopston, Bristol.

Enlarging Apparatus. — Wanted, Lancaster's Multum-in-Parvo to enlarge to 10 by 8, cheap for cash.—Leonard, London House, Carshalton.

Lantern Apparatus. — Wanted, good lantern screen, 8 or 9 ft., complete, for cash; also good slides of the Rhine, no rubbish.—G. Butterworth, Bank Street, Darwen.

Lenses, etc. — Wanted, half-plate R.R, good maker; also quarter ditto, for cash.—Hy. Jones, Buckingham House, Cleveland Street, W.

Cabinet portrait lens by good maker, cheap for cash.—N., 1, Dunkeld Villas, Mutley, Plymouth.

Negatives.—Wanted, one first-class half or whole plate negative of statuary for reproduction. — 2, Holmes Street, Derby.

Sets.—Wanted, Watson whole Acme camera, four double dark slides, turntable, stand, case, Ross' universal symmetrical lens to fit same, with iris diaphragm.—Pollard, Eastview, Western Road, Cheltenham.

Wanted, half-plate aluminium set, cash. Letter to Mr. White, Adelaide, Blackpool.

Wanted, 10 by 8 or 12 by 10 portable camera, lens, slide, and tripod; approval; deposit. Particulars and price to Dorman, Ordsal Electrical Works, Manchester.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

Bargains in Hand Cameras.—Key hand-camera, by Platinotype Company, rapid rectilinear lens, shutter and six slides, size quarter-plate, finest order, £4 12s. 6d.; C Daylight Kodak, rapid rectilinear lens, rotating stops, shutter, finder, etc., covered morocco, carries 24 films, quite new, £3 15s.; Crouch hand-camera, covered morocco leather, carries twenty-four quarter-plates, fitted Crouch lens, iris stops, shutter, etc, £3 7s. 6d.; Lancaster's Omnigraph, carries six quarter-plates, thorough order, with shutter, 16s.; No. 4 Kodak, as new, size 5 by 4, carries 100 films, fine rapid rectilinear lens, instantaneous shutter, in solid leather case, £7 7s.; No. 3 Kodak, as new, size quarter-plate, carries 60 films, rapid rectilinear lens, instantaneous shutter, take £5 7s. 6d.; Optimus Magazine, very finest order, Optimus rapid rectilinear lens, carries twelve quarter-plates, roller blind, shutter, focusing adjustment, £5 5s.; Ronch hand camera, quarter-plate rapid rectilinear lens, roller behind shutter, bag changing, as new, £3 17s. 6d.; Blair's 5 by 4 hand-camera, good lens, time and instantaneous shutter, two finders, rack focussing, three double dark-slides as new, £3 3s.; Kodak No. 1, best R.R. lens, carries 100 films, best order, in leather case, 40s.; Fallowfield's Facile, fitted rapid rectilinear lens, carries twelve quarter-plates, as new, £3 17s. 6d. All above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second hand apparatus bought, sold, or taken in exchange. Inspection invited.

Lanterns! Lanterns!! Lanterns!!! Slides! Slides!! Slides!!! The largest and most varied selection in the whole kingdom. Before selecting elsewhere, call and inspect the stock of the City Sale and Exchange, 54, Lime Street, Leadenhall Street, City, where we have no hesitation in saying you will find all that you require in this way. Lanterns for sale, lanterns lent on hire, lanterns sold on commission, or taken in exchange for other apparatus. Write for special supplemental lists, Manager, City Sale and Exchange, as above.

Bargains in Cameras and Sets.—10 by 8 camera fitted all latest improvements, back and front extension, for wide-angle pictures, leather bellows, reversing back, rising and falling front, two double slides, grand condition, take £6 10s. lot; whole-plate Optimus Rayment camera, double extension, leather bellows, rising, falling, and brass fronts, three double dark slides, Optimus rapid rectilinear lens, Waterhouse stops, three fold stand and case, lot as new, £11 5s.; whole-plate camera (British), by Chapman, double extension, leather bellows, rising front, etc., very fine rapid rectilinear lens, Waterhouse stops, three double slides, folding stand and case, grand lot, as new, £8 5s.; half-plate camera by Houghton, Holborn, double extension, wide-angle movement, rising and falling front, leather bellows, etc., rapid rectilinear lens, Iris stops, three double slides, three-fold stand and case, as new, £5 10s., warranted; half Spanish mahogany camera, by Lonsdale, Leeds, wide angle movement, double extension, leather bellows, etc., rapid rectilinear lens, Waterhouse stops, double dark slide, and folding stand, £4 10s.; Lancaster's half-plate 1892 instantograph camera, all latest improvements double extension, leather bellows, etc., double slide, quarter carrier, very fine rapid rectilinear lens, iris stops, and folding stand, set complete, 75s.; half-plate camera, by Percy Lund, back extension, conicalleather bellows, three double slides, rapid rectilinear lens, shutter, folding stand, and case, as new, take £4 10s.; quarter-plate Shew's Eclipse pattern camera (pocket), reversing back, leather bellows, etc., three double slides, rapid rectilinear lens, rotating stops, and roller blind, shutter, fine lot, as new, £2 12s. 6d.; quarter-plate instantograph camera, lens, iris stops, double slide, and folding stand, 27s. 6d.; quarter-plate Le Merveilleux set, by Lancaster, complete, 15s.; quarter-plate camera, thorough order, all movements, fine rapid rectilinear lens, quite new, Waterhouse stops, folding stand, and four double slides, set complete, 27s. 6s. All above sets guaranteed in every detail as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Lenses.—9 by 7 Optimus rapid Euryscope lens, Waterhouse stops, moveable hood, grand definition, as new, £5 5s.; whole plate portrait lens, Waterhouse stops, rack focussing, covers well, as new, 55s.; whole-plate Laverne wide-angle rectilinear rotating stops, as new, 30s.; whole-plate rapid rectilinear lenses, by Parker, Holborn, covers well to edges, Waterhouse stops, moveable hood, as new, 45s.; ½-plate rapid rectilinear, by Crouch, Barbican, Waterhouse stops, 8 in. focus, as new, £2 7s. 6d.; ½-plate wide-angle rectilinear, by Crouch, Barbican, rotating stops, 6 in. focus, quite new, 42s.; cabinet portrait lens, by Laverne, quite new, grand definition, Waterhouse stops, rack focussing, 35s.; quarter-plate Optimus detective camera lens, by Perken, Son and Rayment, Waterhouse stops, as new, 27s. 6d.; half-plate Lancaster's rectigraph lens, thorough order, covers well, Waterhouse stops, take 32s. 6d.; half-plate Lancaster Instantograph lenses, iris stops, and instantaneous shutter, 15s.; half-plate Ross' rapid symmetrical lens, as new, fine definition, Waterhouse stops, £3 17s. 6d.; Ross' No. 2 portable symmetrical, rotating stops, 4 in. focus, finest order, 42s.; Shew's C. D. V. portrait lens, rack focus, Waterhouse stops, finest condition, 17s. 6d.; pair very fine Argus 5 by 4 rapid rectilinear lenses, accurately paired for stereoscopic work, fitted Waterhouse stops, moveable hood on front, and with camera division, take 42s.; Optimus quarter-plate portrait lens, rack focussing, Waterhouse stops, quite new, 21s.; 5 by 4 Optimus rapid rectilinear, by Perken, Son, and Rayment, Waterhouse stops, 27s. 6d.; Swift 5 by 4 wide-angle rectilinear, 5 in. focus, rotating stops, 32s. 6d.; ½-plate hand-camera lens, by Laverne, rapid rectilinear, adjustable focus 15s., quite new. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Magic Lanterns and Slides. — Walter Tyler's Helioscopic is perfection of all lanterns, supplied to Indian Government, School Boards, science classes, clergy, and exhibitors throughout the world. Impossible to have lanterns give better definition or more satisfactory results; specially constructed lens, which no other lantern possesses.—Walter Tyler, 48, Waterloo Road, London.

Walter Tyler's Best Triples and Biunials are unsurpassed, and perfect in every detail. Good biunials, mahogany bodied, brass fronts, and all improvements, £7 10s.; single lantern, with 4 in. condensers, portrait front lens, 4-wick lamp, complete, in case, 27s. 6d.—Walter Tyler, 48, Waterloo Road, London.

Lantern Lenses.—Specially constructed. Walter Tyler's new Helioscopic portrait combination lantern lens gives the most perfect definition and brilliancy, can be fitted to any lantern, and for excellence cannot be surpassed. No other maker has this lens, which is manufactured expressly for Walter Tyler, 48, Waterloo Road, London.

Regulators and Gauges.—Great reduction, in price. Either can now be had of Walter Tyler for 14s. each. The largest stock of gas cylinders in England. Best seamless steel, tested and valved, and all sizes at very low prices.

Slides from Negatives and Pictures.—Walter Tyler manufactures and colours slides on the premises, thus ensuring speedy delivery, and prices are most moderate.—Walter Tyler, 48, Waterloo Road, London.

Biunial Lanterns.—If you are in want of a really good biunial lantern, perfect in every respect, call and see Walter Tyler's entire brass fronted, mahogany-bodied, lined with Russian iron, and fitted with new best quality lenses, and sold at a most moderate price. The top lantern will take a 4-wick lamp. These are great bargains.—Walter Tyler, 48, Waterloo Road, London.

Hire Department is now perfect. Largest and best collection of slides in the world; over 200,000 always in stock. Temperance, travels, Scripture, educational, comic, tales, etc. Cheaper than any other house, no extra charge for coloured slides or effects. Special terms for large quantities.—Walter Tyler, 48, Waterloo Road, London.

Lanterns and Slides.—If you wish to hire, purchase, or exchange, you cannot possibly do better than go to Walter Tyler, who makes this business a specialite, and you will thus save dealer's and all intermediate profits.—Walter Tyler, 48, Waterloo Road, London.

Second-hand Lanterns and Slides at very moderate prices, also all kinds of apparatus. Send for large catalogue, 120 pages, with instructions for working lanterns of all kinds, and costing an immense sum to produce, sent free for 6 stamps. Small catalogue and second-hand list, post free.—Walter Tyler, 48, Waterloo Road, London.

Bijou Enlarging Lanterns.—Finest results with Hughes's patent rectangular condensers, half the size of ordinary make, superior definition, proper diffusion of light; scientifically constructed, not commercial; several whole and half-plate for sale, cheap.

The Marvellous Pamphengos. — Finest oil-lighted lantern, perfection, equals limelight, stood the test of over fourteen years against all imitations. Over 3 000 sold; supplied to the Government, School Boards, Science Teachers, the Clergy, and Institutions. Elegant solid brass fronts, high-class lenses, unequalled for definition and brilliancy, from £2 10s. each.

Magic Lanterns, Magic Lanterns.—Largest assortment in the world, cheapest and best, nicely japanned lantern body, 4 in. double condensers, portrait front lenses, rack and pinion, four-wick lamp, in case, £1 7s. 6d. Others more elaborate, but cheap.

The Doewra Triple Prize Medal, highest award, supplied to Dr. H. Grattan Guinness, Capt. C. Selwyn, Madame Adelina Patti, and the Royal Polytechnic, etc.

The Malden Triple; supplied to B. J. Malden, Esq.; unparalleled results; Capt. Chas. Reade, R.N.

Fine Triple Lantern; four set of large diameter lenses, £35, cost £60. Given away.

Special Triple; mahogany, entire solid brass fronts, £12 12s.; a really good lantern, unequalled.

Elegant Mahogany Biunial; brass fronts, £7 10s.; blow-through safety jets, 8s. 6d.; mixed gas jet, 12s. 6d.; Malden double dissolving tap, 12s. 6d.; a number of grand effects; particulars free, before purchasing. Send for Mr. Hughes's grandly illustrated catalogue, over 180 fine wood engravings, price 6d.; postage 3d.; separate list of 60,000 slides, price 6d.; postage 3d.; pamphlets free; second-hand lists of bargains.—W. C. HUGHES, Brewster House, Mortimer Road, Kingsland, London, N. 50 slides, all coloured, on loan for 3s., in special despatch boxes.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No 429. Vol. XVI.] FRIDAY, DECEMBER 23, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

Our Views.—Christmas Greeting to all—Woolwich Exhibition; Classes and Conditions—Our Prize Winners—A European Lady's Adventures—Photographing Plants — Botanical and Natural History Photography—A Photograph an Essential—The Lay Press and Photography—Downey's Studies—The Hand-Camera—The Bodleian Treasures—Our Competitions—The Character of the Work—Photography an Aid to Business—A Photograph by Lightning—More Exhibitions—The Exhibitor Controversy—Sutcliffe on Exhibitions—Herr Anschutz's Photos—His Work—The Electrical Wonder—The Stanley Club Presentation of Prizes—Peak District Slides—Our Competitions.

Leader.—One or Two Corrections.

Letters.—Packing of Plates (Cooke)—Society for Harringay (McIntosh)—Exhibitions and Medals (H)—Fillebrook Athenæum Photo-Exhibition (Spurgeon)—Rubber Solution (Marshall)—The Benevolent (Ward)—An Effect of Alum on Gelatine Plates (Anderson)—Cadett's Lightning Plates (Hutchinson)—Lantern Slides (Roff)—What Constitutes an Amateur (Sham-ateur)—Lantern Slide Carrier (James)—A Correction (Brightman).

Apparatus. — Houghton's Printing Frame — Optimus Universal Copying Apparatus—Schnapek's Electric Retouching Apparatus—Elliott's Wave Study.

Articles.—The Charms of Photography (Eldridge)—Construction of Twin Lens Hand Camera (Enn. Ess.)—How to Print in Carbon (Hodges)—Pinhole Photography (Favre-Brandt)—Work with a Hand Camera.

Reviews.—The Practical Photographer's Annual (Lund)—The Book of Delightful and Strange Designs (Tuer)—The British Journal Photographic Almanack (Greenwood)—The Year-Book of Photography (Alexander and Shepheard).

Societies' Notes.

Societies' Meetings.—Ashton—Bournemouth—Brechin—Chorley—Crewe—Croydon—Derby—Durham—Fairfield—Guildford—Hackney—Japan—Kendal—Kensington and Bayswater—Leytonstone—Liverpool—Manchester—Midland—Oxford—Philadelphia—P.S.G.B.—Uttoxeter—W. Surrey—Woolwich.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

TERMS OF SUBSCRIPTION—

United Kingdom	Six Months,	5s. 6d.	Twelve Months,	10s. 10d.		
Postal Union	"	"	6s. 6d.	"	"	13s. 0d.
Out of Postal Union	"	"	7s. 9d.	"	"	15s. 8d.

TRADE ADVERTISEMENTS *are received up to Tuesday morning.*

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Lantern-Slide Competition, No. 44.—Latest day, January 14th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. Two slides to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and slides reproduced and criticised in the Amateur Photographer Supplement, January 28th, 1893).

We give you greeting, good reader, and wish you well for the festive season and the coming year. Christmas comes in strange unwintry garb. Of all times of general vacation the present is one when least opportunity is likely to occur for photographic exercises, and but for the lantern and the amusement which the young portion of the family circle derives from its display, our favourite pursuit will for a little while give place to social obligations, and the door of the dark-room will probably remain locked for a few days. Anon with December past, and the days of '93 commenced, the coming season will seem close at hand, and unfilled intentions of last year, and fresh ones arising from past experience, will awaken early activity.

Amongst the many exhibitions announced for the early part of next year is that of the Woolwich Polytechnic Photographic Society, of which Mr. A. R. Dresser has lately become President. There are one or two points worthy of notice amongst the rules and conditions; thus with regard to the awards it is stated that "silver and bronze medals and certificates in all classes will be placed at the discretion of the judges." Thus the judges are distinctly given a free hand in the matter of awarding or withholding according to their *discretion*, and, again, whilst previously medalled pictures are prevented from competing, it is stated that awards received from photographic journal competitions do not debar. In these two instances it would seem that our Woolwich friends are wisely profiting by the past experience of certain other societies.

We also note with pleasure the much broader principle inculcated in the arrangement of the classes. They are only six in number:—(1) Members' prints; (2) Members' lantern slides: (3) Open amateur lantern slides; (4) Open amateur pictures; (5) Open to amateurs who have never received an award in open exhibition; (6) Hand-camera work. There is here opportunity of hearty approval, only qualified by regret that the amateur is made prominent to the disqualification of the professional, a division as arbitrary as it is rapidly becoming unpopular, and we can hardly see the purpose of Class 5, except as an ill-advised means of encouraging the young aspirant. Happily, there is the *discretion* of three good judges, Messrs. F. P. Cembrano, A. R. Dresser, and A. Pringle, to look to, though we venture to suggest that Mr. Dresser being President would have acted more wisely in leaving the judging to those not directly interested in the Society.

Particulars of the above exhibition should be obtained from Mr. W. Dawes, 145, Chesnut Road, Plumstead, Woolwich, and

we would point out to our readers that as awards received from AMATEUR PHOTOGRAPHER and other journal competitions will not disqualify, some of the contributors to our competitions should stand a good chance of being amongst the winners.

WE do not know whether the "European lady" whose adventures in Thibet are told in the *Gentlewoman* of last week was awakened to photographic practice by the perusal of the useful articles which, it may be remembered, the Rev. F. C. Lambert recently contributed to this excellent ladies' paper; but the fair European appears to have pursued her camera work with more enthusiasm and pluck than discretion, and it may be hoped has secured a sufficiently satisfactory result to reward her enterprise.

Notwithstanding the opposition which the native Lamas, prompted by religious superstition, offered when their own photographs and that of their temple were attempted, the camera was duly set up and the exposure made when half a dozen fierce Thibetan dogs, who had been let loose meanwhile, rushed up, seized her staff with their teeth, wrested it away from her, and she was only saved from further molestation by her companions, who succeeded in keeping the dogs at bay, and escorting her through the gateway. The scowling Lamas stood round like statues, draped in their crimson scarves, and never moved a finger to call the dogs off or render assistance.

Such is photography in Thibet.

SOME experiments in photographing the movements of the growing parts of plants have recently been made with interesting results. Who has not admired and wondered at the beauty of the curves in the delicate tendrils and young stems of such climbing plants as the convolvulus or hop plant? And the beauty of the growth of such plants, when we are told the "movement of the young stems consists of a succession of irregular circular or elliptical curves which vary every moment even in their direction," can be better understood than expressed. By a successive series of photographic records some interesting facts are revealed. Thus, for instance, it is found that even when asleep, plants move, not, as was formerly supposed, interruptedly, ut continuously.

THE application of photography to botanical and natural history studies has often been advocated, and as many of our readers will, perhaps, be shortly laying their plans for a fresh season's work—we are only a week distant from the particular period of the year which is productive of a plentiful crop of good resolutions—and as all have not the desire or special ability for the artistic, we would remind them of such fields for work as those above indicated.

Think how the value of the carefully arranged entomological collection would be enhanced if each species were accompanied by a photograph of the living larva, chrysalis, and, perhaps, of the natural food-plant.

THE collector has never yet fully succeeded in preserving satisfactorily the larval or caterpillar state of the beautiful butterfly or moth forms which fill his cabinet. A dried specimen, stiff in form, faded in hue, or preserved in glycerine or spirits, abnormally distended or contracted, is difficult to observe through the sides of the glass bottle; an accurate drawing but better still a photograph, would, if once adopted, become to be regarded as an essential accompaniment of every collection which makes pretence to being complete and scientific. There is more of beauty and of interest in the "grubs," large and small, which denude our fruit trees of foliage, and riddle our rose petals with tiny holes, than the general world wots of.

THE *Newcastle Daily Chronicle* finds that "photography is rapidly advancing to the dignity of a fine art," and further states that "hitherto the arbitrary lines and shades of camera pictures have prevented them being regarded as artistic, but photographs are now becoming less mechanical." This may not be very intelligently expressed, though there is some truth at the bottom of it.

THE foregoing appears to have been prompted by the contemplation of Messrs. W. and D. Downey's so-called "art studies." In connection with these the same writer says, "Another matter of interest in connection with this new departure in photography is the fact that the prints can be worked from the photo plate in the same way as engravings." Here again there is some truth at the bottom, presuming photogravure or collotype to be referred to, but the above expressions are rather misleading. Truly a little knowledge is a dangerous thing.

THE writer of "Photography for Ladies" in *The Queen*, warns his lady readers off hand-camera work—which, he says, "I do not recommend, as, though a skilful and artistic worker may produce good work, the majority of hand-camera negatives are fit only for the rubbish heap. The facility with which these cameras can be carried, the small cost of the plates which are used with them, the readiness with which exposures are made, all tend to induce carelessness. Hand-cameras have their uses, but I am sure that a stand camera of larger size will give more satisfaction to the worker, and the pictures produced with it more pleasure to her friends." The inducing to carelessness is a too evident feature in a great deal of snap-shot work which one sees about. A hand-camera is in no wise a stepping stone to larger work. It needs a good photographer to use a hand-camera with proper measure of success.

THE work of photographing some of the unique treasures of the Bodleian Library appears to be favourably progressing. Two of the latest productions are photo lithograph fac-simile prints of Columbus's letter, dated 1493, recounting his discoveries to Sanxis, treasurer of Aragon, and Caxton's advertisement (A.D. 1477) of the Salisbury commemoration services. The reproductions are published by Mr. Bernard Quaritch, at Piccadilly, and by the Clarendon Press, Oxford.

WHILST our AMATEUR PHOTOGRAPHER competitions by no means lack support, as may be seen from our periodical supplements, still there are many who do not send in to either, because they look upon journal competitions as somewhat *infra dig.*, or from a timidity which might find expression in the oft-quoted "Fain would I climb but that I fear to fall."

To the first we would point out that the character and quality of many of the competing photographs is such that there are few, if any, who need be ashamed of running with them; moreover, it might not be invidious to cite the names of some of the foremost workers of the day who a year or two back were amongst our medal winners. To the timorous we should like to hand a letter just received from one who early this year took a medal for "A Village Smithy." He has since then been half the world over, and now fills a post of some importance in the photographic department at the "World's Fair," which he says he should not have secured but for his medals.

MANY to whom the necessity for hard work looks remote may one day be glad to have photography to lean upon, nor need it prove an insufficient staff with the innumerable commercial applications which multiply almost daily

A contemporary expressly devoted to the scientific and mechanical interests is responsible for the following:—"At Erroll the other day the telephone linemen were called to repair a break. The wire had been fused by lightning, and on one of the white insulators the workmen, it is said, found a distinct picture of the roof of a neighbouring house, the picture evidently having been flashed on the porcelain by the lightning." Not more wonderful is the patience of an enlightened public, a considerable percentage of whom are practically acquainted with photography, that will still tolerate such rubbish in the newspapers and magazines for which they pay, and to the perusal of which so much time is devoted.

Nothing daunted by the troubles which now almost proverbially follow a photographic exhibition, the early months of the year will keep the persistent exhibitor busy in sending out, packing, and unpacking his pictures, for already the exhibitions announced are numerous—Ryde, Isle of Wight, on January 4th and 5th; West London, January 10th; Holborn, February 18th; Cleveland Camera Club, Middlesbrough, February 1st; Woolwich, February 15th, etc.; Forfar, N.B., March. Others, too, are rumoured but not definitely fixed.

Still the exhibition controversy continues; indeed, our Coventry friend contained little else last week, and although the discussion is quite perennial in its recurrence, this time it seems to have caught hold rather more severely. Every one has something to say on the subject; nearly everybody feels tempted to rush into print about it. There does not appear to be much good come of it all as yet, but it has probably set a good many more thinking, and with the result that gradually the popular mind will become reconciled, first to the simplification and then to the abolition of classes; and next—it is only a step further—abandoning medals altogether, and the appointment of a capable and critical hanging committee.

Mr. F. M. Sutcliffe pronounces strongly in this direction. He says:—"Have no rules at all, tell your judges to make awards to any exhibits that strike them as worthy of distinction. As long as exhibitions are hampered with regulations and distinctions, often difficult to understand, and classes are tolerated, they will not ever be looked on as a show of pictures in the highest sense of the word."

For the purpose of presenting the medals and diplomas awarded by the judges in the photographic competition held in connection with the recent Stanley Show at the Agricultural Hall, the Stanley Cycling Club are giving an invitation "Bohemian Musical Evening," which will take place at the Wortley Hall, Seven Sisters Road, N., on Monday evening, January 9th, to which ladies are also invited. In addition to the musical part of the programme, the slides received in the competition will be shown, and other interesting and amusing items arranged. Admission will be by invitation ticket, which can be had by application to Mr. Herbert Smith, 29, Finsbury Pavement; or to Mr. Wm. Goddard, the Hon. Secretary of the Stanley C. C., 261, Seven Sisters' Road, N.

We again draw the attention of our readers to the fact that we have had placed with us for loan a set of slides of the "Peak District," which we are willing to loan to any one, on condition of carriage being paid. The slides are accompanied by a printed description, and they will help to fill a blank for a society's meeting.

The latest date for "Holidays with the Camera" and "Optimus" 100 Guinea Competition is December 31st.

We have received from Herr Anschütz some striking examples of his well-known instantaneous animal studies, which come as a gentle memento of a trip we had up the river with him and a few friends, including Miss Barnes, on an Immisch electric launch, a short time ago, which, despite the cold day, was very enjoyable.

Herr Anschutz seems to be but little known amongst photographers generally, Muybridge having eclipsed him, not in quality of work, but by lecturing so freely; and yet both have in their way done excellent work. However, now there is every prospect of not only photographers, but the public at large becoming better acquainted with his work.

The Electrical Wonder Co. are now placing upon the market a penny-in-the slot machine, which, on the strength of the penny, shows for a short time some of Anschütz's instantaneous studies, in rapid motion. So exquisitely are these produced as transparencies, and so life-like the impression, which is of course due to the persistence of vision, that we think this new wonder will become a very good thing.

We need not of course point out that it would be quite possible to adapt this contrivance to the lantern, and for photographic exhibitions and soirées it will prove of very great attraction. And we recommend all secretaries of societies to secure one for exhibition.

ONE OR TWO CORRECTIONS.

In our issues of September 30th and November 11th Mr. Mason suggests a particular method of procedure and a bath for toning gelatino-chloride prints. To distinguish these baths many of our readers have called them "Mason's baths," and whilst we do not for one moment object to give Mr. Mason the credit of having discovered these particular formulæ, it is only fair to point out that the use of an alkaline chloride in conjunction with a sulpho-cyanide is by no means new, having been recommended by Liesegang in the *Photographisches Archiv*, November 1867, and Hughes in the same year also suggested it with the addition of a sodium salt of feebly alkaline power, such as the tungstate or phosphate.

The advantages of adding a soluble chloride are that toning takes place rather quicker and more regularly; the disadvantage is that metallic gold is soon deposited on the sides of the stock bottle.

The particular point to which, however, we wish to draw attention, and which we may have seemed to approve of, is, the directions to place the print *unwashed* in the toning bath. This is a great mistake, as nearly every chloride paper in the market contains free acid, which carried over, as it must be, to the fixing bath, will cause the setting free of sulphur, and consequent sulphuration of the print. Either the prints should be thoroughly washed, or else given a soaking in an alkaline carbonate.

All sulpho-cyanide toning baths are faintly acid, and it is far better, as we have found in practice, to make the bath distinctly alkaline by the addition of twenty or thirty grains of carbonate of soda to every forty grains of sulpho-cyanide. Alkaline sulpho-cyanide baths tone very regularly, as quickly as the ordinary, but do not keep their activity quite so long. This may, however, be easily restored by adding a little fresh gold.

The Use of Diaphragms in Enlarging.

In a paper read before the Blackheath Camera Club, and reported in our issue of 16th inst., p. 454, Mr. Dresser is reported to have said, "That stopping down the lens does not increase the definition for enlarging purposes, though it may sometimes appear to do so." There are two questions to decide: (1) Is

Mr. Dresser reported correctly? (2) Is Mr. Dresser correct? The first we may accept as proved, because the statement is so emphatic, so striking, and so specially dwelt upon. Is Mr. Dresser correct? Mr. Dresser will answer it through our quoting from his little work entitled "Bromide Enlarging," published at the beginning of this year. The passage will be found on page 24: "The image having being (*sic*) focussed and made quite sharp by the use of such a diaphragm as is found necessary, etc." Thus Mr. Dresser writes at the beginning of the year, and now at the close he says stops are utterly useless. Which statement is right? Certainly not the latter. We say that stops do improve the marginal definition in enlarging, and we have thought it right to draw attention to the point so that younger workers may not be led astray.

Letters to the Editor.

PACKING OF PLATES, ETC.

SIR,—I read with much interest Mr. J. N. Williams' letter in your issue of 16th December last on packing plates, and though, after what he said, it is perhaps hardly necessary to further broach the subject, I must say that I fully endorse his opinion in every way.

I cannot see why plates should be packed up in bundles of six or four, as to my mind there is not the slightest use in it. I have often found myself that when wanting to fill one double slide, all my plates are packed in fours; consequently, one pair *must* remain open (while the others are being put in the slide or packed away again), and so are liable to wet, dust, and fog. I feel sure it would be beneficial to all photographers, amateur or professional, if this suggestion would only be adopted, while it would not, I think, be any more trouble or expense.

There is another little matter which I think it would also be beneficial if makers would agree to carry it out. It is to have screws for camera stands the same size (I am referring, of course, to the one with which the camera is held on the stand), so that if one loses a screw for his half-plate camera, all he has to do is to go to the nearest photographic dealer and get a half-plate camera screw, instead of being at the necessity of having one made and fitted on purpose. Of course, *if one has time*, the makers can be written to for one, but one has not always time. Of course, these little matters may be considered trifling, but where improvements (and I think most will agree that they are improvements) can be made without trouble or expense, I see no reason why they should not be adopted, and I think your paper one of the best mediums for bringing about these little improvements.—Yours truly,

J. R. COOKE.

* * * *

SOCIETY FOR HARRINGAY.

SIR,—I notice in your issue of the 16th inst. that there is a proposition to start a new photographic society at Harringay.

In case your corespondent, Mr. C. Frith, should not be aware of the existence of the North Middlesex Photographic Society, I beg to point out that the society's rooms are at Jubilee House, Hornsey Road, a distance of about one mile from the centre of the Harringay district.

If Mr. Frith will attend one of our meetings we shall be glad to see him, and he will learn for himself the nature and scope of the society I represent, and I feel sure he must come to the conclusion that there is no necessity to attempt to form another society in this district.

Having frequently observed and appreciated your valuable remarks as to the wasted (though well-intentioned) energies in the formation of societies close to each other must be my apology for troubling you with this communication.—Yours, etc.,

J. MCINTOSH (Hon. Sec.).

* * * *

EXHIBITIONS AND MEDALS.

SIR,—The very obvious objections alluded to by correspondents, last week, to Mr. Harvey-George's plan of popular judgments would alone be fatal, but they are not the only ones. Surely no artist would send work to be judged by the ordinary public. The general temptation would be to exhibit works of commonplace domestic interest, or clap-trap effects which should catch the public eye, rather than a higher class of work which would run the risk of being "over the heads" of the public.

But I notice that no allusion is made to the suggestion that competitors should be classed according to previous wins, *i.e.*, bronze medallists, silver medallists, and so on. Personally, I rather like this notion, as the mere exhibiting in the higher classes would be no small honour. The tendency in some directions, unfortunately (and funnily), appears to be "Bother the honour; give us medals!"

Of what earthly value as distinctions can medals be when granted under such conditions as those recently adopted by a society? Had a class consisted of four desperately bad "pictures," I suppose each would have received an award. Very qualified approval from the Tunbridge Wells judges would, I submit, be a greater distinction than any possible award under the other conditions referred to, which are beautifully calculated to bring medals and awards into general, and too often well deserved, contempt.

Whether, under all the circumstances, the action of the Tunbridge Wells judges was fully justified is quite open to debate; that it was a step in the right direction, I have no doubt.

Does not the tone or some of the correspondence on the subject of medals reveal an eminently unphilosophic state of mind, and very mixed ideas on the function and purpose of awards? Surely a sensible amateur's pleasure in photography may be expected to consist in his actual work, rather than in the contemplation of medals whose value is becoming more and more problematical.—I am, yours, etc,

H.

* * * *

FILLEBROOK ATHENÆUM PHOTOGRAPHIC EXHIBITION.

SIR,—As applications for entry forms are already coming in, will you kindly allow me, through your columns, to say in reply to these applications, that the forms in question will be issued very shortly. Meanwhile it may be interesting to mention that there will be no classes except a Champion class, that no distinction will be made between amateurs and professionals, and that Messrs. F. P. Cembrano, jun., Walter L. Colls and John A. Hodges have kindly promised to act as judges.—I am, yours, etc,

JOSEPH W. SPURGEON (Hon. Sec.).

Drayton Road, Leytonstone, Essex.

* * * *

RUBBER SOLUTION.

SIR,—*Re* letter from Mr. J. N. Williams, in your issue of the 16th inst. Rubber solution is now procurable from any respectable photographic material dealer, waterproof or rubber merchant, cycle agency, or direct from Messrs. Mawson and Swan. To make the solution, dissolve pure rubber in benzole or wood naphtha to the consistency of syrup; a small quantity of the solvent must be added occasionally to make up for evaporation. More difficulty will be experienced in procuring the pure rubber than the ready-made solution, so I would advise Mr. Williams, or others, to use the latter.

I cannot understand Mr. Williams's difficulty with P.O.P. I have used it for two years with the Company's bath, also P.O.P. and Eastman's with Mason's recent bath, and have always found that prints lose just a little, as stated. There must be something wrong with the particular sample of paper he is using (which is rare), or the baths have not been made up properly. Was the exact quantity of sulpho-cyanide used? and was the chemical fresh and good? If Mr. Williams is sure that his baths are all right I advise him to send a piece of unused paper with batch number, an untoned print, and a toned print to the Britannia Company, who will, I am sure, put him right.—Yours, etc.,

Dec. 15th, 1892. JOHN MARSHALL.

* * * *

THE "BENEVOLENT."

SIR,—I enclose a brief report of the last meeting of the Benevolent Committee, and shall esteem it a favour if you will give me space to make a special appeal for subscriptions *before the end of the year*. I regret that in sending the usual applications to old subscribers I made the mistake (easily possible to a new hand) of stating that our financial year ended on February 28th, 1893, but though the annual meeting is held about then, I find that the balance-sheet is made up to December 31st. The association has been very well supported of late by the larger

"Artistic Pictures"

on

Imperial Bromide

OPALS

WORKED BY GASLIGHT.

¼-plates 1/6, Half-plates 3/8,

Per DOZEN.

OF ALL LEADING DEALERS.

IMPERIAL DRY PLATE CO., LD., CRICKLEWOOD, LONDON, N.W.

UP TO DATE!!

In proof of the Public appreciation of the

WORLD-UNRIVALLED

"CADETT" PLATE,

The DELIVERIES alone for 1st half of December are **50 % more** than for the *WHOLE* of November.

	¼	½	1/1	12 x 10	15 x 12	etc.
Price per dozen Lightning ...	1/6	3/8	6/6	16/-	24/-	etc.

DRY PLATES
No. IV.
NOW READY.

OF ALL DEALERS (Gratis.)

CONTENTS:—"The Human Camera," "Under Exposure," "Watkins' Exposure Meter," Notes, Price Lists, etc.

CADETT & NEALL, ASHTEAD, SURREY

CHIEF DEPÔTS.

London—**W. WATSON & SONS,** 313, High Holborn, W.C.
Aberdeen—**G. W. WILSON & CO.,** 25, Crown St.
Bradford—**PERCY LUND & CO.,** St. John Street.
Brighton—**HARDCASTLE & CO.,** 71, East Street.
Burton-on-Trent—**R. KEENE,** 52, High Street.
Dundee—**G. LOWDEN,** 65, Reform Street.
Edinburgh—**J. M. TURNBULL,** 6, Rose Street.
Glasgow—**G. MASON & CO.,** 180, Sauchiehall Street.
Hull—**C. P. GIBSON,** 16, Whitefriar Gate.
Jersey—**J. RENOUF, Junr.,** 45, Don Street.
Leeds—**REYNOLDS & BRANSON,** 14, Commercial Street.
Liverpool—**J. J. ATKINSON,** 37, Manchester St.
Manchester—**J. T. CHAPMAN,** 7, Albert Square.
Newcastle—**F. K. HURMAN & CO.,** 2, St. Nicholas Buildings.
Norwich—**A. E. COE,** 32, London Street.
Sheffield—**J PRESTON,** 4, High Street.

OTHER TOWNS IN FUTURE ADVERTISEMENTS.

subscribers and donors, but we hope to have a great many more of the smaller annual subscriptions (minimum half-a-crown). The money spent in relief will probably prove to be slightly less than last winter; but there is every prospect of considerable calls during the next few months—which will, of course, not come into the next balance-sheet. The diminution in the relief paid in 1892 arises from two causes: (1) from the fact that in the first three months of the year there were no applications (though the latter half of the season is generally busiest); and (2) from the fact that the committee has been able to find work instead of money for some of the most pressing cases in the present season.

I hope to receive a general and generous response while the Christmas goodwill warms the heart of your readers.—Yours, etc.,

H. Snowden Ward,
Memorial Hall, E.C. Hon. Sec.

* * * *

AN EFFECT OF ALUM ON GELATINE PLATES.

Sir,—There is a curious phenomenon I have noticed in connection with the action of alum on gelatine plates which may be of interest. Perhaps it has been published already, and if so you may be able to explain the cause of that effect. The plates I used were Paget 50 Lightning Cadett, but no doubt the same phenomenon can be seen with any other plate.

After exposing and developing with pyro-soda developer, and washing in water, I place my plates into a saturated solution of potash alum. Several weeks ago I noticed that a momentary phosphorescent gleam of light came from the gelatine plate at this point. The effect was seen much better in total darkness, when perhaps I fancied I noticed the image on the plate lighted up. It is a faint gleam of light, but sufficiently distinct. It is not bright enough to fog a rapid plate.

After allowing the plate to remain in the alum solution for a minute or two, I immersed it in water again, when there was another gleam of light, but much fainter. The colour of the light seemed to be of a bluish tint.

This effect comes once at each of these operations; it does not recur on lifting the plate out of the alum solution and re-immersing it.

What is the cause and nature of this light? Is it phosphorescence, or due to a chemical action between the gelatine and the alum (the tangible result being the hardening of the film), or is it electric and caused by the meeting between the alum solution and the gelatine containing oxy-haloid of silver?

Further experiments may show what this is, but if this phenomenon has already been published it would be useless to waste time over it. I hope you will allow space for this letter in the Amateur Photographer, if it is at all new and of sufficient interest, and thanking you in that expectation,—Yours, etc.,

Wm. S. Anderson.

[This phenomenon has been noted several times before, but never satisfactorily explained.—Ed.]

* * * *

LANTERN SLIDES.

Sir,—Our slides illustrative of "Linen and its production" will be lent to those interested, on payment of a small fee to cover postages. Borrowers of course must pay carriage both ways. They are in charge of our curator, Mr. J. C. Middleton, Market Street, to whom application ought to be made.—Yours, etc.,

James D. Roff
Brechin, N.B. (Hon. Sec.)

* * * *

WHAT CONSTITUTES AN "AMATEUR"?

Sir,—Whilst I have no desire to be threatened with proceedings, and harassed conjuring up pictures of oakum-picking and the treadmill, there is a matter which has struck me so forcibly in connection with the ruffling of Mr. Austin's feathers at Hackney, that I feel constrained to brave that gentleman's wrath, and ventilate the matter, even at the risk of receiving a letter from his legal adviser.

The question of what constitutes an amateur crops up as regularly as the influenza or sea serpent, and I have no desire to start the controversy again, but will you kindly inform me how anyone can sell their pictures at an exhibition, or elsewhere, and yet pose as an amateur? Am I not right in surmising that those doing so *may* be disqualified?

In athletics a hard and fast line is clearly defined, as anyone competing for a money prize is for ever disqualified from again entering as an amateur. Surely we photographers wish ourselves to be considered *sans peur et sans reproche* as much as sprint racers and hurdle jumpers, and yet is it a wonder that the title "Amateur" so often raises a smile on the face of our professional brethren?

Might not a new class be organised and designated

Sham-ateur.

* * * *

LANTERN-SLIDE CARRIER.

Sir,—I must ask you to kindly allow me space to reply to Mr. Vevers' letter in your issue of the 16th inst.

I can only judge that Mr. Vevers' remarks are made for the purpose of bounce, and not as expressing his firm conviction in the matter, because anyone who has the smallest capacity for judging the identity or otherwise of invention, could not arrive at the conclusions expressed in his letter. I have lately submitted the matter to several patent experts in London, who are unanimous in their opinion that the inventions are identical, and that as our patent is prior dated we have the prior claim. This confirms your opinion on the matter.

As Mr. Vevers has seen the drawings of both specifications, viz., his and ours, and cannot see the identity of principle in both inventions, perhaps he can see how his carrier is covered by our first and second claims, which read as follows:—

1st.—"In a lantern-slide carrier, a sliding-frame, having lifting levers pivoted thereon in combination, with means for the operation of the said levers during and by the sliding movement of the slide-carrier."

2nd.—"In such a lantern-slide carrier, a pivoted lifting lever in combination with an inclined plane upon the frame in which the slide-carrier moves, and adapted to engage with the said lever to effect the lifting of the lantern-slide, substantially as described."

Whatever my letter might be made to imply, as to deliberate and wilful infringement it was never meant, as it is quite possible for two people to invent the same thing simultaneously without any connection with one another, but if Mr. Vevers still maintains his present position, and sells his carriers, I have no hesitation in saying that such acts will be deliberate and wilful infringement.

Thanking you for the space in your valuable paper,—I am, yours, etc.,

R. W. James.

* * * *

A CORRECTION.

Sir,—Allow me to correct an error which appears in your abridged report of a paper read by myself at the last meeting of the Bristol and West of England Amateur Association.

In your report I am represented as stating the Cadett "Lightning" plate to be *twenty-five* times as rapid as an average wet-plate. This should be *one hundred and twenty-five* times as rapid.

The words actually used were as follows:—"Taking one of the earliest plates on the market (Wratten's ordinary), which was estimated roughly at five times the speed of a wet-plate, and comparing it with one of the most recent rapid makes (Cadett and Neall's Lightning plate), I find the latter to be twenty-five times as rapid as the former, and admitting, for the sake of comparison, the relative rapidity of Wratten's and the wet-plate to be correctly stated, we arrive at the conclusion that the Cadett plate is one hundred and twenty-five times as rapid as the wet-plate."

I must ask you to kindly make this correction in your next issue, as such an error, if left uncorrected, might be calculated to do an injury to Messrs. Cadett and Neall, to whom great credit is due for placing upon the market such excellent plates.

Allow me at the same time to recommend these plates to my brother amateurs; for speed, they outstrip any plate I have ever used, and, unlike many of the excessively rapid plates, they develop easily, giving clear shadows and full printing density without forcing.—I am, etc.,

Edward Brightman.

Sir,—There is a slip in your issue of last week, in the report of Mr. Brightman's paper.

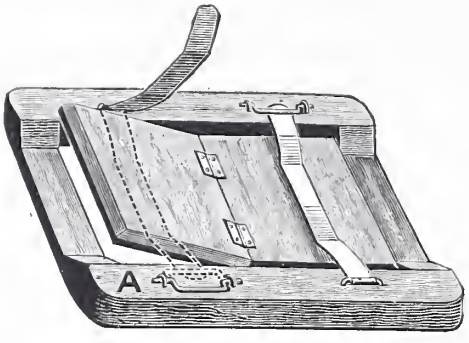
Cadett and Neall's Lightning plates are one hundred and twenty-five (not twenty-five) times the rapidity of the average wet plate. You will see this is a great difference. I am afraid I made the mistake in the report sent you.—Yours, etc.,

Herbert A. Hutchinson.

Apparatus.

HOUGHTON'S NEW HINGED SPRING PRINTING-FRAME.

GEO. HOUGHTON AND SON, of 89, High Holborn, have sent us a sample of this little improvement in printing-frames, which is extremely simple and yet practically an advance, because by its



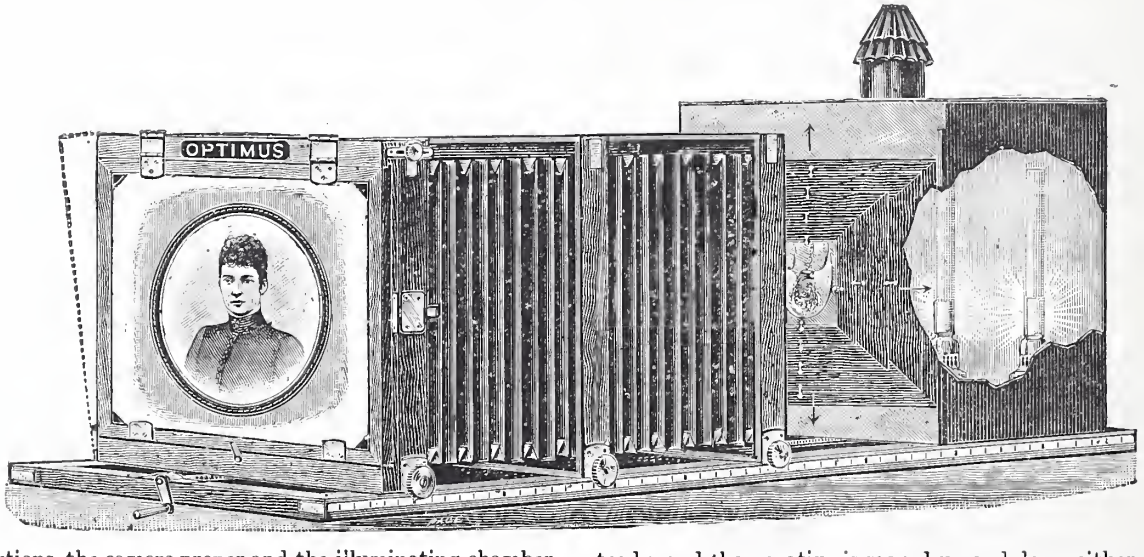
use there is less likelihood of a print shifting during printing, and besides it is less trouble.

The springs are hinged and are held in position by the catch A (see figure), and released by pushing back the same.

The frames are well and substantially made of teak or oak, and retail at the following prices: quarter-plate, 6s.; half-plate, 12s.; whole-plate, 24s. per dozen.

THE "OPTIMUS" UNIVERSAL COPYING APPARATUS.

So many of our readers know the cost of large diameter condensers that they will be glad to hear of this, the latest novelty turned out by Perken, Son, and Rayment, of 99, Hatton Garden, E.C., and more especially as it is a copying, reducing, and enlarging camera in one. As will be seen from the diagram, it consists



of two portions, the camera proper and the illuminating chamber. This latter is made of stout metal with an opal glass front, and a series of carriers which may be shifted up and down, or from side to side, so that any portion of a negative may be utilised. The illuminating power is obtained from two Argand paraffin lamps, which can be raised or lowered in the chamber, thus adapting it to large or small negatives. The light is also reflected on to the front by special reflectors, and from a critical examination of an enlargement we have no hesitation in saying that the illumination of the negative is quite equal and so bright that small print could be easily read on the screen. The camera has, as will be noted, a double extension by screw, and is also provided with a swing back, so that converging or diverging lines in the original negatives which should be parallel may be corrected.

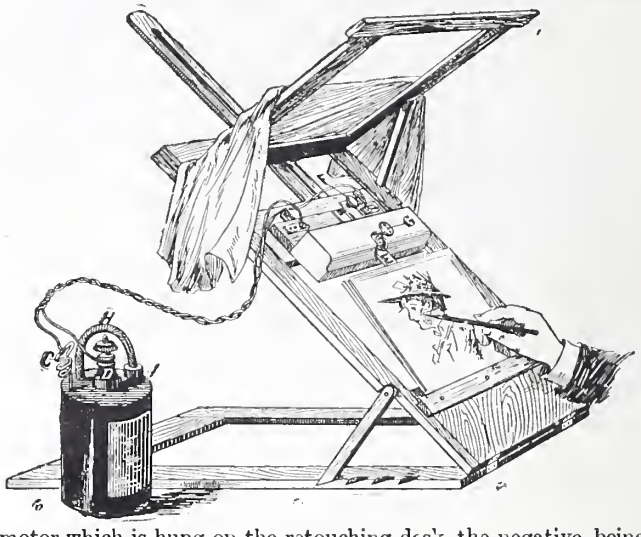
It is well made and finished in mahogany, and as the price will without the lens be about £5 it will be within the reach of all. It is just the instrument for a provincial photographic society that wants a universal lantern slide and enlarging camera, and should solve many a difficulty that is met with by users of small plates.

It may be of interest to note that enlarging from lantern plate to 12 by 10, the exposure for rapid bromide paper was only four minutes.

SCHNAPEK'S ELECTRIC RETOUCHING APPARATUS.

Mr. C. A. Rudowsky, of 3, Guildhall Chambers, E.C., has shown us in operation this novel assistance to the retoucher.

A special cell is connected, as shown in the diagram, to the



motor, which is hung on the retouching desk, the negative being just allowed to rest on the small tongue 3. The pencil is held steady, and the negative is moved up and down either slowly of quickly, so that it is very easy to obtain any sort of grain Using one of the cells three or four hours a day, it will last for more than a year, and at the price of 36s. cannot be called dear, considering the great saving of labour and time.

ELLIOTT AND SON'S WAVE STUDY.

Messrs. Elliott and Son, of Barnet, have sent us a 24 by 18 enlargement of Mr. Birt Acre's well-known wave study. As an example of carbon work it is perfection, and as a picture very fine, the effect being heightened by the peculiar wave-green colour of the pigment. It will form an ornament to any photographer's home. It is sent out mounted on stout boards ready for framing, price 15s.

Construction of Twin-Lens Hand-Camera.—I.

By Enn Ess.

Of the various classes of hand-cameras now offered to photographers, amateur and otherwise, such to which the system of twin, or duplex, lenses has been applied bear the palm in the eyes of those who have had general all-round experience with them. And as the favour they have so far established will doubtless extend, a short discursive paper on their construction will, it is hoped, prove acceptable to many, at this season of the year, when tools used in joinery may find more place for work in their hands than chemicals used in photography.

The leading points of difference between the ordinary hand-camera and that now under consideration may be reckoned at three, viz. :

(1) Two lenses are used in lieu of one.

(2) The picture reflected on the ground glass screen of the finder is identical in size, as in other respects, with that thrown on to the sensitised plate.

(3) Focussing can be carried out from infinity to within the shortest distance of the object the extending capabilities of the camera will admit of accurately, the picture thrown on to the finder screen being the absolute guide.

Now, as compared with an ordinary hand-camera, what gain is obtained from these three points of difference?

The first, *per se*, may by some perhaps hardly be termed a gain, involving as it does an extra initial outlay. That which follows on it, however, entirely casts this objection to the winds.

That gain accrues from the second, none who have had much use of an ordinary hand-camera will for a moment contest. The pleasure of seeing the picture before one the absolute size that it will appear on the developed plate, is well worth the small additional cost incurred. Whilst the advantage set forth under the third point of difference is perhaps the greatest, namely, entire absence of any necessity to "judge distance," focussing being as absolutely correct as when carried out with an ordinary camera on a tripod, under cover of a head cloth. So that one is not called upon to consider whether the object it is desired to photograph is at the correct distance required by the equivalent focal length of the lens in use, should the camera be of the, so termed, fixed-focus type—or if it be of an adjustable focus make, with a set scale of distances, to judge whether the object be fifteen, eighteen, or twenty feet away—such judging distance exercises being, except to the most practised eye, fatal to a well-defined negative.

The main advantages of the twin-lens system having been thus summarised, the uses to which the two lenses are put may be described; and it may be as well to note here, by way of parenthesis, that the two lenses used must be absolutely identical in every essential, so that the picture thrown by one shall not differ in one iota from the picture of the same object thrown by the other.

One of the two lenses is attached to the lower half of the camera lens board, and is that through which the rays of light pass to the sensitised plate, the lower portion of the camera being, in fact, the picture chamber.

The second lens is fixed to the upper portion of the lens board, the rays of light passing through it being reflected from a mirror placed behind it to the ground-glass screen placed over the mirror. The upper portion of the camera, therefore, represents on an enlarged scale the view-finder of the ordinary hand-camera, the second lens taking the place of the small double convex lens usually found in the latter.

The equivalent focal length of the lenses to be used being known, the first matter for consideration in the construction of a twin-lens hand-camera is the arrangement of the reflecting chamber, and this consists in the proper adjustment of the mirror with reference to the lens, and of the ground-glass screen with reference to the mirror. It is here assumed that quarter-plate R.R. lenses of 5¾ in. equivalent focal length are to be arranged for.

In the diagram (fig. 1), the line AB represents the equivalent focal length of lens, A being lens diaphragm; CD position of a quarter-plate ready for exposure; AC, AD extreme upper and lower rays of light touching the plate. From C draw CE at an angle of 45 degs. to AB (or horizon); this line represents the correct position and depth of the required mirror. Draw FH perpendicular to CE, make angle HFL equal angle AFH. Why? Because the angle of incidence equals angle of reflection, the angle of reflection here being AFH. Make FL equal FB.

Draw EP at right angles to EC, and make angle PEO equal angle AEP for same reasons as above. Mark off EO equal ED, and join CO, which will represent the correct position of ground-glass screen with reference to mirror CE.

The central ray of light, AB, passing through the lens, which would impinge on plate CD at B, strikes the mirror at F, and is reflected thence to ground-glass at L; in the same manner the

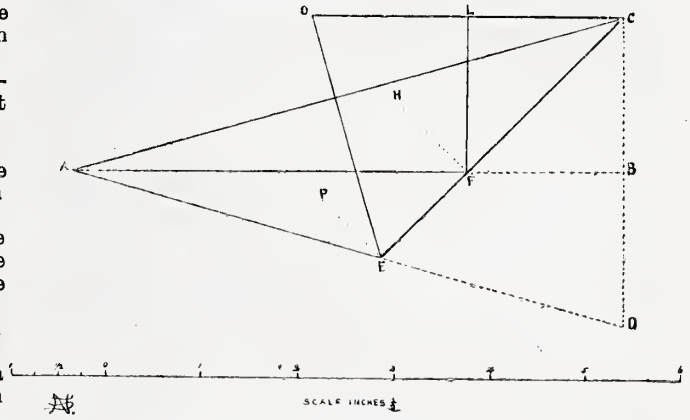


Fig. 1.

ray AD, striking the mirror at E, is reflected to the ground-glass at O. From this it will be noted that the points OLC on the ground-glass correspond respectively with the points CBD on the sensitised plate, and their respective distances from point A (diaphragm of lens) are equal.

Here then is the mode of adjustment of lens, mirror, and ground-glass screen of the "finder" of a twin-lens hand-camera, as offered by dealers.

A question that presents itself is: Why is the angle of 45 degs. for the mirror adhered to by them? Is it the best, or is it

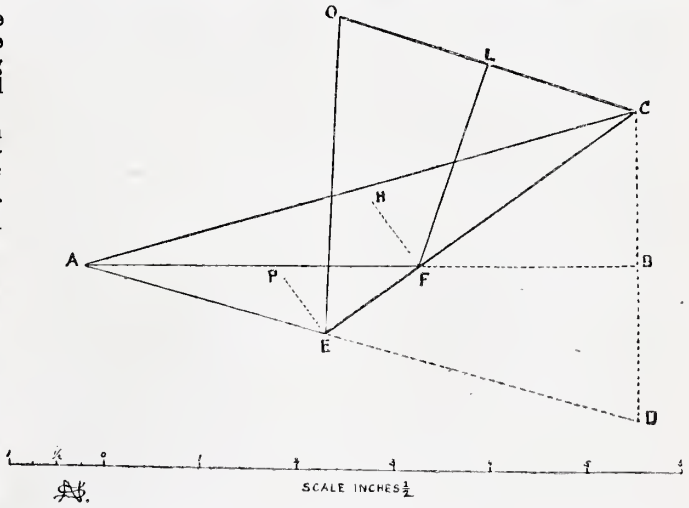


Fig. 2.

simply that one maker follows in the wake of others, without troubling to enquire?

The mirror being placed at this angle, the ground-glass, upon which the picture is thrown, must lie horizontal, which necessitates a constrained position of the head, and an unnatural angle of sight for the eyes in viewing the picture.

When a picture or book is held in the hand to be examined or read, neither is held horizontally. The position which either appears naturally to assume is at an angle to the horizon, and this angle will be found *almost* invariably one of from 25 deg. to 30 deg. This may therefore be accepted as the inclination at which an object, within a foot or so of the eye, can most agree-

ably be scanned by it. It follows then that the position of the glass screen of the finder should assimilate itself in some degree with the above, in order to relieve the eye from any constraint.

To meet the change, the angle of the mirror to the horizon must be reduced, by doing which the angles of reflection and incidence of the rays of light are enlarged; upon which it follows that a greater number of rays are reflected from the reflecting surface. So that a mirror placed behind the lens at an angle of 35 deg. to the horizon throws more rays on to the ground-glass than one placed at an angle of 45 deg. thereto; resulting in the picture being brighter.

The construction necessary to meet the changes in position of mirror and glass screen above advocated is carried out in fig. 2, II., which it will be noted follows exactly upon the lines adopted in fig. I, in which the mirror is placed at an angle of 45 deg. The same lettering being used in both will allow the reader interested in the subject comparing the two diagrams the more easily.

In fig. 2, the mirror CE is set at an angle of 35 deg. to the horizon, which throws the ground-glass screen up to an angle of 20 deg. The mirror in this case becomes somewhat longer from C to E than in the other, otherwise the measurement will be found to correspond in both.

No difference whatever appears in the construction of the picture, as seen on the ground-glass, whether it be reflected by the mirror at an angle of 45 deg. or by that at 35 deg., the difference observable being the brightness of the latter as compared with the former.

Study and Practice of Art in Field Photography.

By A. HORSLEY HINTON.

XI.—CLOUDS IN LANDSCAPE.—*Continued.*

The foregoing remarks are no mere fanciful idea of the writer's, and will probably be well worth your while to think over; and it will require the nice cultivation of taste and judgment before we may be able to determine the character of cloud best suited to our subject, and this especially because *the clouds present at the time of photographing the landscape may not always be those best suited for the purpose of our picture.* For instance, at the present moment of writing there is a blusterous, wintry wind, which resounds against the corners of the house, bending low the naked branches of the trees, and driving the grey smoke wreaths across the clump of trees; the fallen leaves, such as are not too sodden with recent rains, are scattered hither and thither, everything on the country side is significant of the bleak and stormy winter wind, and yet overhead there is a clear, cloudless sky, foretelling a coming frost; only in the west, where the sun is approaching the horizon, is there a belt of solid-looking clouds, very gorgeous in outline, and where the sun illuminated the thinner clouds between, but these clouds, deep purple and gold, seem almost motionless; there does not appear anywhere in the heavens the least indication of wind, nor any response to the buffeting and noisy commotion which is going on below. We can hear the tempestuous sound, and can feel the keen, cold blast, and as neither of these senses are brought directly into play in picture-making, it will be desirable to help the expression of wintry wind by employing such a sky as our feeling may direct.

We are now brought to consider the question of the desirability of obtaining a negative which shall have on it both landscape and clouds in correct value, and thus obtain our print in one operation; or the opposite method of printing from two negatives, on one of which is the landscape with the sky half rendered opaque, so as to prevent the light penetrating, and a second negative which shall contain the particular clouds which we have determined to use and print into the blank left by the first.

Now many writers have pronounced strongly in favour of obtaining both clouds and landscape on the same negative, and have proposed various methods of procedure by which this not too easily secured result may be gained, such as unequally exposing the plate, local development, local reduction, etc. To make such a negative no doubt means a great advance in technical skill, and will make good the photographer's claim to being a clever craftsman, but if what we have said as to the frequent unsuitability of the clouds present for pictorial purposes is true, and unless the whole object of artistic or picture work be merely to produce a mirror-like record of nature (and this we unhesitatingly assert is by no means the *ultima thule* of artistic endeavour), it will be seen that the "clouds on the same negative" method is by no means without serious objection. It may, perhaps, be argued that if the clouds be unsuitable they can be masked out whilst printing, but the masking-out of a thin cloudscape in the presence of an intricate sky-line is by no means an easy matter, and, moreover, in development or exposure so much attention being paid to the preservation of the clouds makes it more than likely that the important features of the view itself may suffer proportionately, and though we be ever so skilful, the *best* of the clouds and the *best* of the landscape probably never are secured on the same negative in their *absolutely correct* relative value—that is to say, we may have a satisfactory plate of the landscape subject, and with it the sky and clouds nicely rendered and sufficiently thin to print at the same time and without any dodging, yet in such an instance had a careful record been kept and a just comparison made, in nearly every case it will be found that a compromise one way or the other has been made—either the clouds are printed rather weaker than they should be in order not to overdo the accompanying scene, or the latter has been carried further and is somewhat too dark in order to bring out the lighter portions of the sky. Two negatives, in each of which the utmost had been done to preserve the individual characters, each produced independently, yet with due regard to their ultimate combination, would, in our opinion, have been the better method. Other reasons might be shown for not (except on rare occasions) attempting to retain the clouds on the one negative, but for the present the above may suffice.

The chief argument in favour of retaining the clouds on the same negative is perhaps that by so doing we remove the danger of having clouds in the picture, the illumination of which is incongruous with the lighting of the rest of the picture, and again there will be no fear of the *perspective* of the clouds being incorrect.

It requires greater knowledge of nature and finer judgment than might be supposed, in order to insure our introduction into the landscape clouds from a separate negative taken at perhaps a quite remote period and station which shall not create a suspicion on the part of the spectator that the direction of the light is identical in both negatives. Moreover, unless the photographer possess knowledge and a trained perception of things it is by no means unusual to introduce clouds, the perspective of which will at once betray their having been taken from a totally different position. Thus, clouds taken high above the horizon or near the zenith will by no means do if printed close above the horizon of the picture. We see the clouds overhead as it were "broad-side" and in front of or at right angles to the line of view, but as these become more remote we view them obliquely, and perspective influences their form as much as it does terrestrial objects.

Faults in both these directions, however, will be made by those only whose knowledge and observation is incomplete, so that except for the very beginner we can see but little

advantage in securing the clouds present at the same time as we photographed the landscape. Even if the clouds be in every day desirable, it will be best to expose one plate for the terrestrial part of the picture, and a second immediately afterwards for the sky, giving each the exposure and subsequent treatment best suited to their respective character.

Finally, let it be kept well in mind that an attractive or effective cloudscape is by no means always an essential contributory to a perfect picture. In many instances a flat tone with little or no indication of clouds will be best suited to harmonise with the view. If the interest in the subject be not very assertive and is not dependent upon the time of day (such as "Evening," "Daybreak," "Coming Storm," etc., which would largely depend upon suitable cloud effects), then it will be best to keep the sky portion of the picture very quiet and subdued so as not to detract from the interest of the principal object. In this as in other particulars it is not a matter for instruction or a thing that can be laid down, by rule, it is entirely a matter of feeling and conscientious observation.

Perhaps the reason why so many err in respect to the representation of clouds is because, intent upon the tangible and approachable things around, the perceptions have been but little trained to observe all the wonders and beauty which canopy our earth. Thus Mr. Ruskin writes, "It is strange how little in general people know about the sky. . . . One says it has been wet, and another it has been windy, and another it has been warm. Who among the whole chattering crowd can tell one of the forms and the precipices of the chain of tall white mountains that girded the horizon at noon yesterday? Who saw the narrow sunbeam that came out of the south, and smote upon their summits until they melted and mouldered away in a dust of blue rain? Who saw the dance of the dead clouds when the sunlight left them last night and the west wind blew them before it like withered leaves? All has passed unregretted as unseen; or if the apathy be ever shaken off even for an instant, it is only by what is gross or what is extraordinary."

The spirit of this last sentence should be carried in mind. It is not the grand, the spectacular, the phenomenal in the heavens which will help us in our picture, but rather the quiet subtle beauty, full of sweet expressiveness, which, rightly portrayed, shall instil into our picture a poetry inseparable from the passing to and fro of rain and sunshine, storm and shadow, the bloom and flush of morning mist and splendour of the day's decline. Study all this with the respect which the subject deserves. There is surely something in the exalted splendour and far-off mystery of cloudland which commands our reverential thought.

A general meeting of the Staffordshire Photographic Survey Society was held on the 12th inst., Mr. Charles Lyham in the chair. There was a very large number of members present. Mr. Buchanan Wollaston, of the Platinotype Company, delivered a most interesting lecture on the platinotype process. In the course of his lecture Mr. Wollaston pointed out the usefulness of the platinotype printing in such an undertaking as the photographic survey of Staffordshire. The process was one of absolute permanency, and its artistic merit was far in advance of any other method of producing photographic prints. Many attempts have been made to destroy the platinotype image without success. The lecturer gave a most elaborate demonstration of printing, and showed excellent results, developing in front of his appreciative audience many beautiful pictures illustrating the different tints that might be got on the platinotype paper. After his lecture, many questions on the process were asked of Mr. Wollaston, which he replied to at great length.

How to Print in Carbon.

By John A. Hodges.

It has always been a matter of wonderment to the writer that carbon, or pigment, printing should have been so little practised by amateurs. The only probable reason that can be suggested for its lack of popularity must be assigned to a general ignorance of the simplicity of the process and the ease with which a practical knowledge of the working details of it is acquired. There are, however, at the time of writing, certain indications that would tend to the belief that interest in carbon printing is being aroused, and the Editor tells me that he is constantly receiving inquiries upon matters of detail incidental to the working of the process.

It will not be gainsaid that permanence is one of the most important attributes of any photographic printing process; and in this respect carbon is unrivalled, except perhaps by platinum. It is very much to be regretted that photographers, as a body, pay so little attention to the question of permanency of their photographs. It is a subject which might worthily receive some of the attention which is so liberally bestowed upon far less important matters. An esteemed writer recently openly expressed the opinion that only permanent photographs should be admitted to the walls of an exhibition, and there would seem to be good sound sense and reasoning in the suggestion.

The stability of a pigment print does not rest upon mere assertion or conjecture. The process has passed from the period of infancy to ripe maturity, and the test of time has amply proved its right to rank with the most permanent of photographic printing methods. The image consists merely of carbon in the form of a pigment and gelatine, the latter converted, by the reaction between it and the bichromate of potash, into a substance almost resembling leather. Fading, strictly so called, is a matter of impossibility with a carbon print; the only possible cause of deterioration is damp. Long exposure to an excessively humid atmosphere will sometimes cause a kind of mildew or fungoid growth to appear on the surface of the print, which a soft damp sponge *carefully applied* will at once remove.

A further, and from a different point of view almost equally important, advantage of carbon printing is the variety of treatment and range of colour at the disposal of the worker. Any colour from Indian ink to red chalk can be obtained, and, moreover, there is no uncertainty in the duplication of a particular shade of colour. Two prints or two thousand may be produced at will of exactly the same tint, and without the least variation in colour. In regard to "quality," carbon prints compare favourably with other processes, and in some respects, particularly in the rendering of shadow detail, they far excel platinotypes and bromides. Any kind of surface may be produced at the will of the operator, its nature depending upon the character of the temporary support employed. Those for whom the high glaze of a squeegeed gelatino-chloride print have charms may obtain a surface rivalling that process in brilliancy, whilst those who prefer the less meretricious but possibly more artistic matt surface of platinotype may, without difficulty, obtain exactly the effect desired. Nor is one confined to the use of any particular kind of paper for the final support, a very smooth or very rough paper being equally applicable. As an instance of the great variety of treatment permissible, attention may be directed to the exhibits of Mr. Bedford and Mr. Yeo, at the last exhibition in Pall Mall. The former gentleman showed some striking pictures of a warm sepia colour, on very rough Whatman paper, their characteristic features being boldness and breadth of treatment, and but for the catalogue the uninitiated would probably have pronounced them to be "platinum-toned silver prints." Mr. Yeo's pictures, also in carbon, were of a totally different character; being of small dimensions, certainly not larger than half-plate, and delicately printed on India paper in red chalk, soft, and full of the most delicate gradation. I merely call attention to these pictures as an instance of the versatility, if I may use the expression, of the process. The attainment of such markedly different results would, I think, not be possible by any other process to the ordinary practical worker.

In order to remove the impression, which is certainly an erroneous one, that pigment printing is difficult, it may be well, before proceeding to detail the practical directions for working, to give a brief outline of the process.

The carbon process was first introduced by Mr. Swan more than twenty years ago, but has since been considerably modified and improved. The tissue consists of prepared paper, which has been evenly and uniformly coated by machinery upon one side with a mixture of gelatine, sugar, and pigment. In this state it is insensitive to light, and will keep, if properly stored, for an indefinite period. It should be cut to size, and kept under pressure in a dry, cool atmosphere. Extremes of temperature will cause it to deteriorate; hot weather

will make it horny, and damp weather cause it to absorb an undue amount of moisture. In order to make the pigmented tissue sensitive to light, it is immersed, face downwards, in a solution of bichromate of potassium. It is then removed and dried. Tissue so prepared will retain its keeping qualities under favourable conditions for about a week, but the best results will always be obtained from tissue freshly sensitised. The reader need not even go to the trouble of sensitising the tissue, for the Autotype Company, and also Messrs. Marion, supply tissue ready sensitised, which will keep in good condition for at least a fortnight. The sensitised tissue is exposed to light under the negative, the duration of the exposure being estimated, not by an examination of the tissue, which undergoes no visual change, but by the discoloration of a piece of sensitised paper placed in an instrument called an actinometer, hereafter to be described. Development is effected by immersing the exposed tissue in warm water. The *rationale* of the process is as follows: Gelatine which has been mixed with a solution of bichromate of potassium will, if it be exposed to light, become insoluble. Upon this curious property the carbon process is founded. When the exposed tissue is placed in the warm water, the gelatine not acted upon by light, representing, of course, the high lights, sky, etc., in the picture, is dissolved away, the more or less insoluble portions remaining and forming the image.

The above is a very brief outline of the process, though in practice there are some very important modifications and matters of detail to be observed, to which attention will be directed in due course. My object now is to introduce the subject to the reader in such a way as to demonstrate the simplicity of the process, and induce him to give it a fair trial.

I have said nothing at present on the question of cost. Pigment printing, however, is the most economical of processes, rivalling albumenised paper in that respect; which in itself is a matter of no small importance to a great many. Nor is the initial cost of the necessary apparatus at all alarming, the expensive outfits enumerated in dealers' catalogues being entirely unnecessary. Most of the necessary apparatus will probably already be in the possession of the reader, but in order that he may know what will be required, I have drawn up the following list, and have placed the approximate price against each article :—

	s.	d.
A tin or enamelled iron dish, about 20 by 16, and 6 in. deep. A large baking tin would do, probable cost about	2	6
A strong iron support to hold the dish over the gas-stove, probable cost about	2	6
An atmospheric gas-stove	2	6
Or a small paraffin stove, cost	3	6
Two deep porcelain dishes, 12 by 10	4	0
A thermometer...	1	6
A squeegee	1	0
One dozen wood clips	1	0
Three pieces of glass (patent plate), 10 by 8	3	0

As I have said, probably many of the above articles will already be in the reader's possession, and the price of such would be deducted from the total cost.

The following materials and chemicals will be necessary :—

Pigmented tissue.
Single transfer paper.
Sawyer's flexible support (for double transfer).
One quire of blotting paper.
One ounce French chalk.
Four ounces plain collodion.
One pound of alum.
Quarter pound of bichromate of potash.
Half-dozen indiarubber finger stalls.
One ounce pure bees-wax.
One ounce benzole.
Some strips of opaque black paper gummed to form "safe edge."

Having procured the above, the reader will be ready for work.

Pin-hole Photography.*

BY J. FAVRE-BRANDT.

ATTENTION has been called many times to the quality of photographs that can be obtained in a darkened chamber, or camera, without special optical apparatus, simply by means of a small hole in a very thin plate.

Amateur photographers can make pictures, pretty large in size, of landscapes and even of monuments, without being obliged to buy lenses costing from 10 dols. to 300 dols.

No doubt to reproduce plans and engravings it is necessary to use the famous lenses of Ross, Dallmeyer, Beck, Hermagis, Francais, Nadar, and others. But we wish to perceive, when we examine a photograph, the particular effect which is produced on a more or less near-sighted eye by its entire surroundings, when it looks at nature from a little distance. It seems to us that suppressing the lens and replacing it by a pin-hole gives more artistic results as far as regards monuments, or landscapes without moving figures.

"Nevertheless, far from us," says the AMATEUR PHOTOGRAPHER journal, "is the idea of crying down the photographic lens which has in the last year attained so great perfection; for in the greater number of cases these instruments are, and will remain, indispensable." But leaving out the instantaneous photograph which has such charm for the amateur; and the portrait, the speciality of the professional, let us confine our ambition to obtaining in as artistic a manner as possible either landscapes or copies of monuments; and of these latter there are certainly no lack in Japan.

M. Meheux says that the most suitable hole is round, and drilled in a plate of copper or sheet brass of $\frac{2}{10}$ millimetre in thickness; it is necessary that the borders show no burr and are bevelled, forming a cone.

Captain Colson has remarked that, although the depth of focus is unlimited, the greatest sharpness of definition for each size of hole is found at a determined distance, and he has succeeded in finding the proper focal distances for different diameters of holes; he has thus found that :—

The best definition for a hole $\frac{3}{10}$ millimetre is at 11 centimetres.
" " $\frac{4}{10}$ " 20 "
" " $\frac{5}{10}$ " 30 "
" " $\frac{6}{10}$ " 44 "

It may be mentioned that the size of the object to be reproduced is proportional to the distance from the apparatus, and to the distance from the hole to the sensitive surface.

It follows from this rule, that after having taken, for example, one view of an entire cathedral with a focal length of 20 centimetres, say with the $\frac{4}{10}$ millimetre diameter of hole, if we wish to have the details of the gateway without moving from our place, it is sufficient to lengthen the focus to 44 centimetres and to use the $\frac{6}{10}$ millimetre hole.

We may further remark that the *Stenope*—the name given to the above mentioned plates—easily includes an angle of 100 degrees, or even more, without at all deforming architectural lines, and without destroying the perspective, which is far from being the case with even the most perfect wide-angle lens.

The length of exposure presents much less difficulty than with lenses. Unless we expose enormously beyond the proper time, it is nearly impossible to over-expose; we can always obtain a good negative by developing intelligently.

Nevertheless, if one must have a general approximate rule, we may say as a general proposition that the time of exposure is at least twenty-five times longer with the $\frac{3}{10}$mm. hole than with a lens focussed upon the same view and provided with a medium diaphragm; fifty times longer with the $\frac{4}{10}$mm. hole; one hundred times longer with the $\frac{5}{10}$mm. hole; and two hundred times longer with the $\frac{6}{10}$mm. hole; it being well understood that we use the focal lengths corresponding to these holes.

But we can modify these times of exposure without over-exposing the plate. On the whole this depends very much on the plates, the developer, and the actinic power of the light. Experience will be the best guide for every class of picture. Just the same as in nature, the sun has here great influence on the clearness of the view, more than it has when using lenses.

To sum up the advantages of using the *Stenope* :—

(1) More artistic definition than with a lens.
(2) Unlimited depths of focus.
(3) Perfect perspective for lines in architecture.
(4) Mathematical exactness in the scale of plans.
(5) The angle of view can include as much as 170 degrees.

All the proofs, under the numbers 1, 2, 3, and 4, represent the same subject, and are taken with the same apparatus from one and the same distance, say 20 metres from the corner of a house marked A. The number representing the house and garden was taken with the $\frac{3}{10}$mm. hole, distance from hole to sensitive plate 11 centimetres, time of exposure 1 min. 25 sec.

No. 2 view from same plate with the $\frac{4}{10}$mm. hole 20 centimetres from the plate.

No. 3 is taken with the $\frac{5}{10}$mm. hole, 30 centimetres from the plate; and finally, No. 4 is taken with $\frac{6}{10}$ mm. hole, 44 centimetres from the plate; distance between the apparatus and the house 18 to 20 metres. Time of exposure varies in the different numbers from 1 min. 25 sec. to 2 min. 30 sec.

* Read before the Photographic Society of Japan.

he treats us to "Some photographic methods of book illustration," which, unfortunately, he condenses into some twenty pages. Had he condensed to invisibility some of the contributions and enlarged his own, we should have been better pleased; still, from each article there is some hint or suggestion to be gathered. The frontispiece is a collotype by Messrs. Morgan and Kidd, and five process-block illustrations, which are excellently printed, are also included. We all look for the "B. J. A.," and here it is and well worth the money—if for paper only.

The Year-Book of Photography for 1893. Edited by T. C. Hepworth, F.C.S., and published by Alexander and Shepheard, 21 and 22, Furnival Street, E.C. Price 1s.

The Editor is to be congratulated upon the improvement in the turn-out of this annual, both paper and printing being decidedly an improvement on previous year's issue. It contains the usual run of annual articles and also two collotypes, one from a negative by the Editor, in which the surroundings are hardly in keeping with the figure.

WORK WITH A HAND-CAMERA.

AT the ordinary meeting of the Putney Society, Dr. W. J. Sheppard in the chair, the programme of the evening was "Work with a Hand-camera," by Mr. A. R. Dresser. Mr. Dresser was unfortunately unable, through illness, to be present, but Mr. Henry Crouch, the well-known optician, kindly came in his stead, and from notes supplied by Mr. Dresser, supplemented by his own experience, gave the members much useful information and advice on the subject. In a short preface, Mr. Crouch said that there could be little doubt but that the "ordinary" cameras were being gradually superseded by the hand-camera, and that sooner or later the former would be a thing of the past. There were several reasons why this should be, but the two chief were the improvements in hand-cameras, and that plates were now made of such greatly increased sensitiveness that sufficient exposure could be obtained for snap-shots even in what would quite recently have been considered too dull a light. With regard to the cameras, every year showed a marked alteration for the better; attention had been successfully given to the lens, shutter, and changing mechanism, and extra movements had been added, such as focussing, rising front, and swing back.

Hand-cameras might be divided broadly into two classes, viz., magazine, and those where the ordinary dark slides were used. Each system possessed advantages peculiar to itself, and it was a matter of individual opinion or special requirements that determined the question which camera was the most suitable. No camera should be expected to meet all wants. Some people desired to do very quick work; to them a magazine camera would offer advantages. Others wished to get the best results under very varying conditions; for such the double backs or roll-holder would be preferable. For all-round work he had personally no preference, but thought that good and artistic work could be done with any good magazine or double-back camera, if workers would only take the trouble to make themselves acquainted with the mechanism and the extent and limitations of the power of their camera. Mr. Dresser had successfully worked the rollable film, and this method had the great advantage of compactness, lightness, and ease of changing, but it would appear from general practice of average workers that these advantages were not unfrequently considered to be more than counterbalanced by the subsequent trouble and uncertainty in development, etc.

Mr. Crouch then proceeded to deal in detail with the main parts of the hand-camera, commencing with the lens. He said that in hand-cameras the mistake was often made of using an inferior lens, in fact, one that no serious photographer would dream of placing on his ordinary camera. This was all the more inexplicable when it must be obvious that the conditions of successful work with a hand-camera were far more difficult and required higher optical qualities in the lens than were generally found necessary in ordinary work. In order to obtain a suitable extent of view, and to be able to take in objects fairly near as well as at a distance, it was necessary that the lens should be of a comparatively short focus. For a quarter-plate Mr. Dresser used by preference one of 4½ in. focus. Mr. Crouch personally preferred one of about 5 in., but it might be laid down as a rule that the focus should be between 4¼ and 5¾ in., and certainly not more than 6 in.; if more than 6 in., the chief objects within 25 or 30 ft. would be out of proportion to the plate, and successful photography of street scenes and subjects in any but very open views would be extremely difficult. As regarded aperture, he had made lenses working at *f*/5, but they were not to be recommended except to the most expert workers, who would only use them at this aperture with the greatest discrimination; *f*/8 was, generally speaking, the largest aperture at which any lens would work satisfactorily as regards covering power and depth of focus, and as a rule a smaller stop should be used if possible, so that when the principal object is in focus, the foreground as well as the distance may be fairly sharp. As a large aperture required very much more judgment and experience in working than did a moderate one of say *f*/11, or *f*/16, he recommended beginners to commence with the smaller, and only by slow degrees and after careful study of results, to increase it. A rapid rectilinear lens was by no means necessary, and Mr. Crouch said that for landscape, and, indeed, for nearly all subjects except architecture, a good single lens was preferable, as it undoubtedly gave pictures of greater brilliancy. This result was, he thought, to a great extent due to the fact that the diaphragm was placed in front of the lens, and, therefore, a larger quantity of light could enter than was possible when the diaphragm was placed between the combinations, as in lenses of the R. R. type. The single lens had also the advantage of being considerably cheaper, a really good one being about the same price as an R. R. of comparatively inferior quality. As a first-class lens was the first consideration in hand-camera work, he strongly urged everyone who desired to do good work to see that his camera was fitted with as good a lens as he could afford to provide.

As regarded shutters, there was an almost endless variety. He thought a good one should work with certainty at from 1-200th to 2 sec., and the best place for it was near the diaphragm or immediately in front of the plate, the latter being theoretically more correct, but after careful comparison of results he had come to the conclusion that there was practically little or no difference, but as the shutter working near the diaphragm could be more compactly arranged and had several other advantages, he preferred it on the whole to other forms. It was necessary that all parts of the shutter should be very strongly made, so as to be able to resist the very considerable strains due to a high speed, and it should be as simple as possible, so as to be unaffected by small particles of dust and other vicissitudes, which he had known to seriously interfere with delicate mechanisms at the critical moment. For occasional work, Mr. Crouch advised a fixed-focus camera, but for those with leisure and in constant practice better work would be possible with the power of altering the focus; this would, however, probably mean many failures until they were able to judge distances quickly and correctly. He had found finders a great nuisance and quite unnecessary, and he strongly advised members to do without them. By practising pointing the camera he ventured to assert that in a very short time they would acquire the necessary proficiency to get the subject properly on the plate, and the finder would not be missed. As to the proper way of holding the camera, he did not think that any one position would meet all requirements; for near objects he held it in front of him about 4 ft. from the ground, sometimes considerably lower; for far objects he held it higher. In this connection he had found a rising front of great assistance, as a very slight rise or fall of the front was equivalent to altering the height of the camera several inches. Using the camera in this manner, without finders, he claimed to be able to get in exactly what he wanted with greater speed and ease, and with less trouble in keeping lines parallel and true.

There were now so many good plates and films that it would be invidious to advise the use of any one, but it should be remembered that for hand-camera work a brand having an emulsion rich in silver was much more necessary than when slow exposures were given. His advice was, having found a good brand of plates or films and suitable developer, stick to them. He regarded development as one of the chief means towards a good result. When a plate had had an exposure of only $\frac{1}{200}$ sec, much experience and careful thought were necessary. The following formula had, in his hands, given excellent results, viz., eikonogen 1 oz., sulphite soda 4 oz., carbenate potass. 1 oz., carbonate soda or washing soda 1½ oz., water 30 oz., and any hydroquinone developer, one without *caustic* soda by preference. With very fast exposures two parts eikonogen solution should be added to one part of the quinol, to begin with; if this does not act sufficiently quickly, pour it off and use the eiko. alone, adding saturated solution carbonate potassium till the plate begins to fog. Some plates would stand up to 1 drm. per ounce, and others would not stand any addition. It would thus be seen that a strong developer should not be used to start with. Begin with a normal developer until image is fairly out, and then strengthen until the plate will bear no more. Perhaps a still better developer for general work, and lantern slides, bromide papers and exposures from $\frac{1}{10}$ to $\frac{1}{100}$ sec., is Rodinal, 1 part to 20 parts water; should there be any difficulty in getting density, the developer should be poured off and hydroquinone used. He, however, thought that the best developer for snap shots would be found in Amidol, but was unable to say definitely, having had only two chances to try it; however, on those occasions he had obtained marvellous detail and density, using the following formulæ: (1) Amidol 1 oz., meta-bisulphite potassium 1 oz., water 10 oz.; (2) saturated solution of potassium; (3) 10 per cent. solution potassium bromide. For

use, take No. 1 1 drm., No. 2 1 drm., No. 3 5 drops, water 1 oz. Should exposure have been very rapid, leave out No. 3; if necessary to increase density, add 20 to 40 drops more of No. 2. The image would flash up at once, but the plate would not fog unless very much over-exposed. In cases of over-exposure more bromide should be used, but developer should not be weakened by the addition of more water.

After Mr. Cronch's lecture about eighty slides made by Mr. Dresser were passed through the lantern and met with hearty applause from those present. An album containing a large number of prints was also passed round, showing the very excellent work done by him under varying conditions. Mr. Crouch's "Dresser" hand-camera was shown and explained, the members expressing their high appreciation of its design and workmanship.

Exhibitions.

SOCIETY.	ENTRIES CLOSE.	OPENS.	CLOSES.	ADDRESS OF SECRETARY.
Phot. Soc. India	—	Dec. 1893.	—	Calcutta.
West London	—	Jan. 10	—	Lionel C. Bennett, 30, Blandford Road, Bedford Park, W.
Louth	—	Jan. 26	—	S. Francis Clarke, L.D.S., 8, Upgate, Louth.
Cleveland Camera Club ...	Jan. 25	Feb. 1	—	J. J. Hallam, 11, Amber St, Saltburn-by-the-Sea.
Woolwich Polytechnic Phot. Soc:	—	Feb. 16	Feb. 18	W. Dawes, 145, Chesnut Rd., Plumstead, Woolwich.
Holborn	—	Feb. 18	Feb. 20	F. J. Cobb, 3, Albion Grove, Barnsbury, N.
Fillebrook Atheneum ..	Feb. 20	Mar. 1	Mar 2	J. W. Spurgeon, 1, Drayton Villas, Leytonstone.
Philadelphia (U.S A.) Phot Society	Mar. 15	April 17	April 29	Robt. S. Redfield, chairman, Exhibition Com. 1,601, Callowhill St. Philadelphia, U.S.A.

Societies' Notes.

WE are requested to state that the new Secretary of the Fairfield Camera Club is Mr. S. O. H. Kean, 6, Balmoral Road, Fairfield, to whom all communications should be addressed.

THE Toronto (Canada) Camera Club will hold their second annual exhibition on January 12th, 13th, and 14th, 1893. Entries close on January 8th, 1893.

THE Torquay Phot. Soc. will hold their first exhibition from February 14th to 18th, 1893. The following are the classes and conditions:—

For Members' Only.—(1) Architecture and interiors, (2) genre and portraits, (3) landscape, (4) lantern slides (set of six), (5) marine, (6) six prints from negatives taken with a hand-camera, (7) enlargements.

Open Classes.—(8) Architecture and interiors, (9) genre, (10) landscape, (11) lantern slides (set of six), (12) marine, (13) portraits and figure studies, (14) six prints from negatives taken with a hand-camera, (15) enlargements, (16) for ladies only (any subject).

Conditions.—(1) That the exhibition be held at Iredale's Art Gallery, Strand, Torquay, on the 14th, 15th, 16th, 17th, and 18th February, 1893. (2) That all members' exhibits must be the work of the exhibitor, including exposure, development, retouching, printing, toning, and mounting. (3) That all exhibits must be sent in to the Hon. Sec., addressed to him, care of Mr. Andrew Iredale, 13, Strand, Torquay, on or before February 9th, carriage paid, at the owner's risk, duly mounted and classified; any question of classification to be left to the Committee, and in case of any dispute to be referred to the Judges. Enlargements to be eligible in all the members' classes. (4) The Judges shall have power to withhold the medals in any of the members' classes, and also in the open classes (with the concurrence of the Committee) on the ground of insufficient merit, and their decision shall be final. (5) That all exhibits be sent in with the title and exhibitor's name written on the back. (6) That no competitor shall take more than one prize in any class. (7) That the entrance fee for each frame or mount in the open classes be 1s. 6d., and 1s. 6d. for lantern slides, which fees must be sent to the Hon. Sec., with the advice form annexed, not later than February 3rd, to be entered in the catalogue.

Every possible care will be taken to protect exhibits, but the Committee will not be responsible for any loss arising from fire, accident, or other cause. An experienced packer will be employed. Silver and bronze medals and certificates are offered in all classes. The President has kindly placed three silver medals at the disposal of the Judges for award in Nos. 1, 3, and 5 of the members' classes.

Societies' Meetings.

Ashton-under-Lyne.—On the 13th inst. Major Bradley presiding, and before a very large gathering of members and friends, the AMATEUR PHOTOGRAPHER 1892 Prize Slides were exhibited. Mr. R. T. Marsland worked the lantern (biunial), and the Secretary (Mr G. H. Dean) read from the somewhat tattered manuscript the names of competitors and the titles of their pictures. Some of the slides were very good and loudly applauded. The slides of Mrs. F. Clarke were very much admired.

Bournemouth.—On 14th inst. a very successful evening was spent, when THE AMATEUR PHOTOGRAPHER Prize Slides were exhibited, and were much admired by those present. Some 150 slides were passed through the lantern, the description of each being given by Mr. P. H. Price. Many of them were criticised and afforded a great amount of instruction to slide-makers present.

Brechin (Phot. Assoc.).—For the past year this association has been engaged preparing slides to illustrate linen manufacture. These are now completed, and on Wednesday evening, December 14th, Mr. D. H. Saunders (Dundee) gave a lecture entitled "Linen and its Production," before an audience of about 1,000 persons. The lecture was illustrated by seventy slides prepared by the members of the association, and was listened to with great attention. The lecturer was thoroughly at home in his subject, and slides of the processes of bygone days, such as the spinning wheel, hand looms, etc., gave him an opportunity of referring to the past history of linen manufacture in Scotland, with all its romantic incidents, of which he was not slow to avail himself. Suitable songs by Miss Johnston and Mr. Duncan were sung at intervals, and proved most acceptable. The slides were considered to be most admirable illustrations of the processes, and the positions of the people at work.

Chorley.—On 7th a meeting was held, when a demonstration was given by the President (Mr. J. T. Brierley, F.C.S.) on the "Autotype Process of Carbon Printing." Mr. Brierley had previously printed some of the tissue, so as to show the prints in their various stages of development, etc., showing both the single and double transfer processes and an easily made actinometer for gauging the necessary exposure for a correct print, as well as several specimens of opal. During the evening members were invited to compete and carry out the various processes. At the close of the demonstration a number of specimen prints for the members' inspection, kindly sent down by the Autotype Company, were handed round and were much admired, Mr. Brierley presenting all the members present with trial pieces of tissue. Previous to beginning the demonstration, Mr. Brierley showed the company present the photographically active light rays, as differing from the non-actinic, by means of the spectroscope.

Crewe.—A very pleasing and successful entertainment took place on the 14th inst., the President (Rev. W. G. Rainsford, D.D.) in the chair. There was a very good attendance of members and friends. There were upwards of 150 slides thrown upon the screen, and, judging from the hearty applause, they must have been heartily appreciated. The subjects were Channel Islands, statuary, and Irish scenery. The pictures were explained by Dr. Rainsford and the Secretary (Mr. T. Gorrell). The Channel Island slides were the work and kind privilege of W. Tylar, Birmingham, and were considered extremely good for hand-camera work, especially the low-priced 12s. 6d. A beautiful sample of Tylar's binocularscope for viewing lantern slides was exhibited, and liked very much. Also a Tylar's new frame for lantern-slide making; this was very greatly admired.

Croydon (Camera Club).—Lantern night, the President in the chair. Messrs. Sladden, Oakley, Maclean, Weston, Corden, and Holland showed slides. It was notified that Mr. G. R. White had resumed his secretarial duties. The next meeting will be on 2nd January, when a debate on "What is *now* the best printing process?" will be opened by the President; prints in illustration of various processes will be shown, and a number of different methods of printing will be advocated by those who have signified their intention to take a leading part in the evening's proceedings.

Croydon (Microscopical).—Lantern evening on 16th inst., Society of Arts' loan series of Chicago slides. The President, Mr. Lovett, read a short paper, which, after briefly reviewing the history of the city, was devoted to an account of the World's Fair to be held in 1893. The slides included views of the city and the principal

ILFORD

BROMIDE OPALS.

Reduced Prices

4¼	by	3¼	-	1/6
5	,,	4	-	2/6
6½	,,	4¾	-	3/8
8½	,,	6½	-	6/6
10	,,	8	-	10/-
12	,,	10	-	16/-
15	,,	12	-	24/-

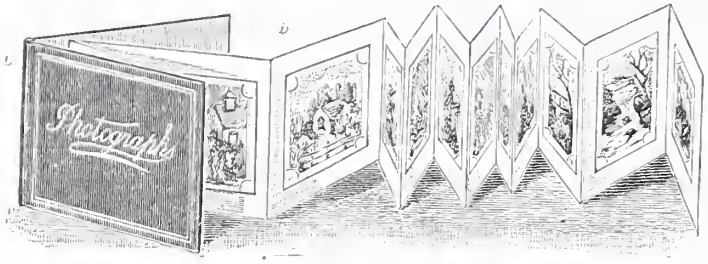
Per doz.

Britannia Works Company, Ld.,

ILFORD, LONDON, E.

SPECIAL LINES IN
PERCY LUND and CO.S ALBUMS.

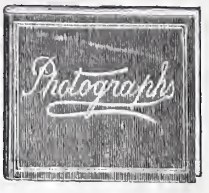
Our Albums are kept in stock by all good dealers. Insist on being supplied with PERCY LUND & CO.'s Make.



OPEN.

The Panoramic Series.

Suitable for the pocket. Specially recommended for a Series of views of any particular district. Admirably adapted for chloride or aristotype prints. No mounting required. Will hold 12 photographs at sight, and can be used for storing others by putting several on each page. Positively unequalled for price and quality.



CLOSED.

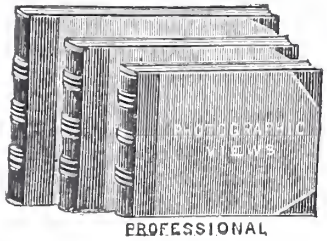
¼-plate, 6d. ⅕-plate, 1/- Whole-plate, 1/6

"This is just the thing for a man to carry who requires photographs for reference. It is also suitable for home use."—*Photographic News*

The Antique Panoramic Series.

A superior quality to the above. Hand-made, old style, cardboard leaves with plain chocolate line. Very artistic in appearance.

¼-plate, 1/- ½-plate, 1/6. Whole-plate, 2/-

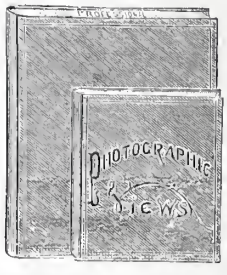


PROFESSIONAL

The Ordinary View Series.

View Albums, with stiff leaves for mounting on. Fine cream-toned 10-sheet cards, linen-edged at back, 25 leaves in each book. Stylishly lettered in gold on front, "Photographic Views."

	Full Cloth.	Half Roan.	Full Bound, gilt edges.
8 x 6	3/-	4/6	7/6
10 x 8	4/-	5/6	8/6
12 x 10	5/-	7/6	10/6



The Cheap Detective Series.

loth bound, good quality boards, not the cheap wood pulp boards usually sold, which are far from pure. Lettered on front, "Photographic Views." Upright or oblong.

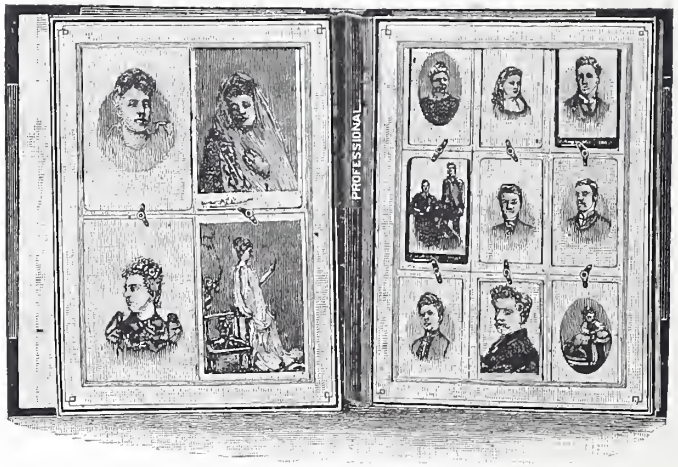
For ¼-plate, 1/- each. For ½-plate, 2/- each.

The Professional Specimen Album.

For show-room use. A new and elegant arrangement of each page admits of the photograph being inserted in a moment, without the labour of pushing up as in ordinary albums, and the troublesome elastic in the usual table display albums. The album closes uniformly whether full or empty, and no bursting of the back is possible.

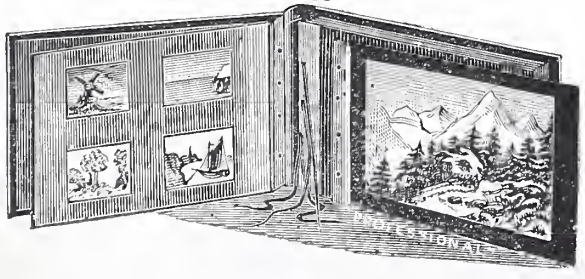
Elegantly half-bound, 10 leaves (16 x 13). holding 36 C.-de-V.'s and 64 Cabinets, lettered in gilt, "Portraits," 25/-

Ditto, in superior full morocco, highly finished, 35/-



The Interchangeable Leaf Series.

Prints may be burnished or rolled. Leaves that become soiled may be removed. One really good quality album back may be used, and thousands of spare pictures kept in drawers or store boxes. Numerous kinds of mounts are supplied.



PRICE LIST of Cases only. To hold 25 or 50.

	Cloth,	Half-Roan,	Full morocco,	Extra Finish.
8 x 6	2/3	3/9	4/9	
10 x 8	2 9	4/3	5/3	
12 x 10	3/9	5/3	6/3	
15 x 12	4/9	6/3	7/3	

Prices of leaves with perforated guard complete, ready for binding, per 100.

	Plain, Cream, or White.	Oxford Line.	Plate Sunk.
8x 6	5/3	5¼ x 3¾ 6/3	5¼ x 3¾ 10/6
10x 8	8/-	7 x 5 or 7½ x 5 9/-	7 x 5 or 7½ x 5 ...16/-
12x10	12/-	8½ x 6½, 9x7, or 9½x7½... 13/-	8½x6½, 9x7, or 9½x7½...23/-
15x12	19/-	10½ x 8¼ 21/-	10½x8¼ 38/-

We make almost every kind of Album to order, and shall be glad to quote for large or small quantities.

COMPLETE CATALOGUE OF PHOTOGRAPHIC REQUISITES, POST-FREE, 3d.

FACTORY: The Country Press, BRADFORD.

LONDON WAREHOUSE:
Memorial Hall, Ludgate Circus.

public buildings, sketches and plans of the Exposition buildings and grounds, with photographs of them now nearly finished, which gave one a good idea of the general appearance which the Exposition would present when opened.

Derby.—A meeting was held on the 13th inst., when a lecture and demonstration on the "Platinotype Process" was given by Mr. S. G. B. Wollaston, of London. Mr. R. Keene occupied the chair, and there was a large attendance of members. In connection with the summer outdoor meetings prizes were offered for the best pictures taken by amateur members only. First prize, silver medal, given by Mr. W. Bemrose; second prize, bronze medal, given by Mr. W. T. F. Rowney; third prize, certificate of merit, given by the society. The pictures having been judged by Captain W. de W. Abney, R.E., F.R.S. (President), his decision was announced as followed:—First prize, Mr. A. H. Bennet; second prize, Mr. F. E. Bemrose third prize, Mr. J. Riches.

Durham.—A meeting was held on 10th inst. Vice-President Councillor E. White in the chair. The Chairman introduced Mr. J. Brown, of the Newcastle and Northern Counties' Photographic Association, who gave a very interesting and instructive lecture, entitled "Some Hints on Landscape Work; What to Do, and What to Avoid." The lecture was illustrated with limelight views, showing good and defective points in composition, lighting, artistic arrangement, etc. Mr. Brown handled his subject in a happy and masterly manner, and many of the beautiful slides shown as perfect specimens by Mr. E. G. Lee were deservedly applauded. An exhibition of members' work will be held on Tuesday, Feb. 14th, 1893.

East London.—General meeting on 13th inst., Mr. F. Uffindell,; Vice-President, in the chair. Mr. Pasco gave a very interesting lecture upon "Norfolk Broads," illustrated with photographic views kindly lent by the Great Eastern Railway Company.

Fairfield.—The first annual meeting was held on the 13th inst., when the President, Mr. J. L. Mackrell, presided over a large attendance of members. The prints and slides sent into the annual competition were on view, and the judges awards given as follows:—Class A, the club silver medal and clasp, Mr. Harry Holt. Class B, bronze medal, C. A. Timmins. Class C, bronze medal, S. H. I. Smith; highly commended, F. H. Elsby. Class D, bronze medal for slides, T. E. C. Wilson. In all classes the work was of exceedingly high standard, and the announcement of the awards called forth loud applause. The annual report was then given by the Hon. Secretary, who briefly reviewed the year's work, and congratulated the club on the rapid progress it had made. This was followed by the Treasurer's financial statement, which showed a goodly balance on the right side. After the adoption of these reports, the election of office-bearers for 1893 took place, the following gentlemen being elected: President, H. J. Mallabar; Vice-President, C. A. Timmins; Council, Messrs. F. H. Elsby, H. Forrest, H. Holt, J. L. Mackrell, J. Samuel, S. H. J. Smith; Hon. Librarian, G. W. L. Lenton; Hon. Auditor, T. E. C. Wilson; Hon. Treasurer, W. T. Sutton, 27, Seldon Street; Hon. Secretary, S. O. H. Keay, 6, Balmoral Road.

Guildford.—On 15th, Messrs. Hill Bros., of Surbiton, demonstrated the working of their "Cresco Fylma" solution before members of this Society. The manipulations were most simple, and the results obtained fully satisfied everyone, a half-plate transparency being enlarged to whole-plate, and transferred to an opal plate, also a 5 by 4 to 6½ by 5, and a lantern plate to 4¼ square. Very slight loss of density took place, and an actual increase of detail. No distortion took place in any case. On January 3rd the AMATEUR PHOTOGRAPHER Prize Slides will be shown at the Society's meeting.

Hackney.—Ordinary meeting held on 13th inst., Mr. T. Houghton presiding. The Hon. Secretary showed several specialities sent by Mr. Vevers, of Leeds. Mr. Hudson passed around a plate which had been very badly stained, but which Mr. Beckett had cleared of iris-descence by Farmer's reducer. Mr. Wire showed some flashlight work he had done with the use of a Todd-Forret lamp. Mr. R. Beckett passed around a photograph of himself which had been taken by flashlight by Mr. Nievsky with his combined apparatus. Mr. A. Barker showed a photograph he had taken of a spark from the Wimshurst electric machine. The Chairman handed round a broken lantern-slide which was valuable to him, and asked for opinions as to how to repair it. Mr. Dean advised using Canada balsam to cement plain glass on to it, then removing the cover, print a negative from it by contact in diffused light. Mr. R. Beckett advised using a roasting jack. Major Bruno's design of hand-camera was then explained by Mr. Beckett. It was made by Mr. Park, of Kingsland. The chief points were, a dark-slide or roll-holder could be used, extending front, sliding, focussing screen, swing-back, rising front, etc. Mr. Hudson showed his Thornton-Pickard shutter. He had a hole in the blind, but by using a small piece of court plaster it was successfully repaired. Mr. Walter Woodbury then gave a demonstration of the Paget print-out lantern-slides and opal plates. A special frame was necessary to print opals, and he showed one the firm were bringing out capable of taking any size upwards, from lantern size to half-plate. Lantern plates could be successfully printed in ordinary quarter-plate frame, as the density could easily be judged by looking through one side. Perfect contact was absolutely necessary with lantern-slides, as otherwise fuzziness would become a defect fatal to lantern-slides. The lecturer then made some exposures with the platinotype lamp successfully. Ordinary toning bath can be used, but if combined bath is used the density must be a little greater. Several members took samples and promised to bring up results next lantern night.

Japan.—The regular monthly meeting was held on 4th ult. Work done by Messrs. C. D. West and W. K. Burton during the summer vacation was on exhibition. The regular meeting began at 5 p.m., Mr. G. Gilbert in the chair. The following gentlemen were unanimously elected members of the society:—Messrs. A. B. Brown, J. B. M. Barrett, P. C. E. Choissone, and T. Kiyokawa, Drs. E. Scriber, and Augustus Wood. Mr. Tanaka showed some results of experiments in collotype. They were not quite perfect, but were remarkable as the results of first attempts in this difficult branch of photo-mechanical work, the more especially as Mr. Tanaka had worked entirely from written instructions. After trying various more or less complicated formulæ, he had settled on the following.—Bichromate of ammonium, 1 gram; pure gelatine, 6 grams; water, 70 c.c. He had found an admixture of isinglass, even in small quantities, the reverse of an advantage. Messrs. W. K. Burton and K. Arito showed the results of experiments in orthochromatic work. They had set themselves the task of getting photographs showing a brilliant *pure* scarlet, a bright but darkish blue, and a pure chrome yellow, in their true value. If these could be shown truly all other colours could. They had succeeded best with a mixture of eosine and cyanine. Eosine was a strong sensitiser for the yellow and the green, cyanine for the red and the orange. The following formula was used:—Cyanine solution, 1 part in 1,000, 1 part; eosine solution, 1 part in 1,000, 1 part; ammonia, 10 per cent. solution, 4 parts; water (distilled), 14 parts. The plates were bathed for two minutes and dried. Of course, such plates need the extremest care in working. A yellow screen was used with plate-glass sides, inclosing ½ in. thickness of the following solution:—Picric acid, 1 part; water, 500 parts The intense but very light yellow colour of a picric acid solution seemed particularly well suited to orthochromatisation. With a denser solution than that mentioned it was possible to overdo the orthochromatisation. The exposure needed was ten times that with the same plate untreated, but without any yellow screen. Mr. J. Favre-Brandt sent a most interesting paper on "Pin-Hole Photography" (photography without a lens), along with samples of the work done, and of the pin-holes used. It was agreed that these samples were remarkably good. In fact, in some respects, they were better than photographs taken with a lens, showing a pleasing softness. The exposures had been from one to about five minutes. The unusual excellence of these results was probably due to the great care with which the pin-holes were prepared. They were in thin plates of nickel, were perfectly circular, in each case of the exact diameter that would give the finest definition with the focal length used, and the edges were delicately bevelled. Mr. Favre-Brandt's paper was in French, and a translation appears in another column of this issue. Mr. Kajima Sebi showed a hand-camera in the form of an opera glass. The arrangement on the whole was ingenious, but samples of work done by the camera were much under-exposed. The lens working at about 1-16 was far too slow for this kind of work, especially as the shutter was one that gave a bad co-efficient of light. Further, there was no means of adjusting the focus. Mr. T. Kiyokawa presented the society with a bottle of retouching solution. This was to be applied to the plates whilst still wet, after fixing and washing. It was evidently an aqueous solution. Mr. Tanaka was asked to take the bottle with him, to try the solutions, and to report to the next meeting.

Kendal.—On 14th inst. a meeting was held. After the ordinary business of the evening, which comprised arrangements for a lantern slide competition to be held next March, Mr. Joseph Severs read a most interesting and instructive paper on "Photo-micrography," or the science of photographing microscopic objects for use on the lantern screen. He described its advantages, one of which was the accuracy with which any minute object could be reproduced by the lens, as opposed to the old plan of drawing them, an artist being apt to draw what he expects to see rather than what he does see. The microscopic lens was not always suitable for photography, and ought to be tested before using it for such, as the visual rays of the spectrum were not equal to the chemical rays, the latter having greater refrangibility, and, therefore, an object which would be in perfect focus in the microscope, on the photographic plate would be simply a blur; for the chemical rays were always behind the visual ones. Mr. Severs showed with his microscope and camera how to set about operations for photographing a microscopic object. Some negatives and very beautiful prints were handed round for inspection at the close of the meeting.

Kensington and Bayswater.—A meeting was held on the 19th

inst., presided over by Mr. F. A. Hahn. Messrs. Burton and Braham, from the Autotype Company, gave a practical demonstration on the carbon process, or, as it is now more correctly termed, "pigment printing."

Liverpool (Camera Club).—The usual meeting was held on 14th inst., when an interesting demonstration was given by Mr. T. Edwards on "Lantern-Slides, Reduction from half-plate." Mr. Edwards in the course of his remarks described the making of a simple camera for reducing purposes, and with one of which he proceeded to reduce from half-plate to lantern-slides. The club's second annual fancy dress ball took place on Monday the 12th inst., in the City Hall, Eberle Street, and was a great success. The costumes were finer and more elaborate than last year, and comprised Eastern princesses, Italians, Greeks, Minnie Palmers, the Seasons, Witches, Romans, courtiers, clowns, etc., etc., the spectacle when all were dancing being brilliant. During the evening several groups were taken by flashlight.

Manchester.—The regular monthly meeting was held on 13th inst., Mr. J. W. Wade in the chair. THE AMATEUR PHOTOGRAPHER Prize Slides were thrown on the screen and described by Mr. Shirley. It is noticeable that all the prizes in Class 4, architecture, were obtained by members of the Society. During the interval Messrs. Beck's representative described the "Frena" hand-camera. A number of snap-shot slides by members were shown on the screen. Many of these possessed considerable merit, and were a distinct improvement on previous exhibits of the same kind. Perhaps this is owing to the slides having been carefully selected by a committee from those sent in. The exhibitors were Messrs. Gilmore, Shirley, Irvine, Wade, Yorston, Gilchrist, H. Wade, Bradburn, Holmes, Smedley, Shaw, and Robinson.

Midland.—An ordinary general meeting was held on the 16th inst. The chair was occupied by the President (Dr. Hall Edwards), who delivered an address on Mr. Frederick Iles' "Chromotone Process" (patent). This is a new process whereby a large range of new colours can be obtained upon any silver deposit either on prints or lantern slides. The lecturer explained that Mr. Iles had confided his discovery to him, and that during the last three months they had experimented with it with such good results that a patent had been obtained. A large number of bromide prints treated with the Chromotone bath were exhibited. The tones obtained varied from a slate-green colour to a bright blue. Some of them were much admired, and will undoubtedly lend themselves with good effect to many branches of our art. A large range of greens could also be obtained by first treating the print in a special uranium bath, then in the Chromotone bath. Some of the prints exhibited both blue and green, producing a very pretty effect, especially in seascapes, when the sea could be produced in one colour and the clouds in another. The lantern slides exhibited were very beautiful. A very much larger range of tones was produced than in the prints. This was accounted for by Dr. Hall Edwards, by the fact that very few experiments had been made with papers, whilst lantern plates had been largely used. He was of opinion that any tone shown through the lantern could be obtained on paper. All the prints shown were made upon Ilford rapid bromide paper, developed with hydroquinone. Many other tones could be produced with other papers, Alpha paper especially lending itself to green tones. The compositions of the baths were not made known, but as they are shortly to be put on the market, photographers will be able to try them for themselves. The lecturer described the process as being exceedingly simple, any special tone being obtained with the greatest ease. He had every reason to believe that the colours were as permanent as the prints themselves.

Oxford.—At a special meeting held on December 15th the Indian and colonial slides, circulated by the P. S. G. B. affiliation scheme were exhibited in the President's lantern, who afterwards showed a set of fine slides of the Niagara Falls by the Woodbury process.

Philadelphia.—A meeting was held on 9th ult. the President (Mr. Joseph H. Burroughs) in the chair. The Board of Directors reported the election of the following active members: Messrs. Richard Paxson and William G. Hopper. It was also announced that the President had appointed the following committee to conduct the sixth annual photographic exhibition under agreement with the Society of Amateur Photographers of New York and the Boston Camera Club: Robert S. Redfield, John G. Bullock, Charles R. Pencoast, Charles L. Mitchell, M.D., and Edmund Stirling. The exhibition will be held April 17th to 29th, 1893, in the galleries of the Pennsylvania Academy of Fine Arts, and every effort will be made to make it the most interesting and successful of the series yet held. The resolution offered at the last stated meeting to amend the bye-laws so as to make a change in the meeting night, was discussed at considerable length, and finally, on motion of Mr. Coates, was laid on the table. A number of photographic novelties were shown by Mr. Morris Earle, among which were: Celluloid trays of special construction, and made in various colours; a transparent tray with a well at one end to hold the developer when tray was raised to examine the negative through the bottom. He also showed and described the Frena magazine hand-camera, made by Messrs. R. and J. Beck, of London. The camera used cut celluloid films, 3¼ in square, the magazine containing forty such films. Dr. Mitchell showed negatives made under similar conditions with the Ross Concentric lens and Ross Portable lens, which afforded an opportunity for studying the comparative advantages of the two lenses for different classes of work. An interesting collection of lantern-slides was shown and described by Mr. John C. Browne, illustrating a recent trip made by him to Alaska.

Phot. Soc. of Great Britain.—Ordinary meeting on 13th inst, the President, Captain W. de W. Abney, in the chair. Seventeen new members were elected, and it was announced that the following societies were admitted to affiliation:—Hackney Photographic Society, Cheltenham Amateur Photographic Society. Major Leonard Darwin, R.E., M.P., read a paper on the "Testing of Photographic Lenses at Kew," in which he detailed the various points to be dealt with, and how they had been met, after which some slides were passed through the lantern of the lens-testing apparatus, and its special points indicated by Major Darwin. Mr. W. E. Debenham spoke of the desirability of such an institution, and trusted it would clear away some of the old long-cherished misconceptions as to the peculiar virtues of certain lenses, such as their "depth of focus." He would suggest the use of the word "defining" rather than "covering," using the former with reference to a certain standard of definition. Many people prefer a picture darker towards the margin, so that in this case they might think it desirable to use a larger stop than the largest mentioned on the certificate. Mr. T. R. Dallmeyer had been to Kew and was greatly impressed with the value of the work done there. He himself was in favour of the C. I. system, although he had advocated a similar one, the unit of which was $f/\sqrt{10}$ rather than $f/10$. From a practical point of view it was important to note the number of concave surfaces directed towards the plate, which often threw back on to the plate images of its bright parts, acting, in fact, as concave mirrors. Mr. J. R Gotz remarked that the actual maximum aperture of the diaphragms was not necessarily the effective aperture. Mr. Hugo, who does the practical work of the lens-testing at Kew, remarked upon the very accurate nature of the results obtained. Mr. Chapman Jones doubted whether simple investigation was sufficient test for flare-spot. He had recently been using two lenses which had never noticeably possessed this defect, and, on using a smaller stop than usual, however, both had given a flare-spot which had not been visible on the focussing screen, on account of the poor illumination caused by the small stops. Mr. Francis Galton, F.R.S., remarked on the rapidity and accuracy of the testing apparatus designed by Major Darwin. Major Darwin said that the Kew Committee would consider the suggestions made. They kept a sharp look-out for the flare-spot with small stops. One difficulty at Kew arose from the atmosphere, which prevented any attempt to test on distant objects. The President, in moving a vote of thanks to Major Darwin, suggested that if a lens was obviously bad, the best way would probably be to mark it bad, as was done in the Science and Art Department with examination papers, and waste no time in accurate measurements.

Uttoxeter.—On 16th inst. Mr. S. G. Buchanan Wollaston gave a lecture and demonstration on "Platinum Printing Processes," in the town-hall. There was a full attendance of members, and the greatest interest was shown in the demonstration. Mr. Wollaston developed a number of prints by the cold-bath process, correctly, under and over exposed. A large number of mounted specimens were handed round, which were greatly admired.

West Surrey.—The fortnightly meeting was held on the 14th inst, Mr. Geo. Davison in the chair, supported by Messrs. W. Winsford and J. L. Lyell. Four gentlemen were nominated for election as members of the society. The President (Colonel J. Gale) then read a short paper upon the capabilities and pleasures of photography generally, after which he exhibited upon the screen transparencies of his last season's work, explaining and detailing incidents connected with them in a manner that was most entertaining to those present.

Woolwich (Polytechnic).—The ordinary meeting was held on 12th inst. A quantity of slides by Mr. Dresser, including some of his Wild West pictures, were passed through the lantern and much admired. Prospectuses of the coming exhibition of the society were distributed.

The Record Press, Limited, 376, Strand, London, W.C., will shortly issue, and simultaneously in the United States, "On Sledge and Horseback to Outcast Siberian Lepers," by Miss Kate Marsden, which promises to be one of the most interesting and graphic books of the season. It is dedicated, by special permission, to Her Majesty the Queen, and is illustrated with original drawings, sketches, photographs, etc.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5902. **Backing Plates.**—Could anyone tell me what is meant by "backing" plates, what are the advantages of it, and how I could do so?—IGNORAMUS.

5903. **Lens.**—Will some of your readers be kind enough to state difference between a R. wide-angle lens and a wide-angle combination lens, the advantage one has over the other, and the reason? All the ruling factors to be the same as to focus and light and subject and exposure.—A. JACK.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED

Oct. 28th.—No. 5849.
Nov. 4th.—Nos. 5852, 5854.
,, 18th.—No. 5866.
,, 25th.—Nos. 5875, 5878, 5880, 5881, 5884.
Dec. 2nd.—Nos. 5886, 5890.
,, 9th.—Nos. 5893, 5894, 5895, 5896, 5897.
,, 16th.—Nos. 5898, 5899, 5900, 5901.

EDITORIAL.

SPECIAL NOTICE.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* BEFORE TUESDAY MORNING'S *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—ED. AM. PHOT.

M. A.—Probably your opal is too thick. We have just seen an arrangement in which two lamps were used side by side with opal in front and opal reflectors, which answers perfectly. Try for thinner opal, or if you cannot get it make it yourself by coating a sheet of glass with an emulsion of sulphate of baryta, which will stop out less light.

H. W.—Surely our articles on apparatus making will help you. It is merely a question of alteration of measurements. You could obtain all the parts of a camera from Lonsdale Bros., 3, Cookridge Street, Leeds, far cheaper than you can make them.

J. C.—(1) You can obtain from almost any dealer fluffless blotting paper, which may be used to blot off the superfluous moisture from print, and then let it dry spontaneously. (2) The prints should be mounted when just beginning to curl. (3) It is not advisable to use blotting paper. Try waxed or stearin paper, to be had from most chemists. (4) It is not advisable to apply pressure to the album.

F. DUNDAS TODD.—Many thanks for your letter. Send us a note or two, and we will send you on the AMATEUR PHOTOGRAPHER each week. Glad to hear things are lively with you, and we will bear the subject in mind.

E. W. MALE.—We think that stereoscopic transparencies when well made are the very finest productions of photography. It is a branch well worth taking up. Yes, the measurements are made from the centres of lenses. As a rule the enlarged negatives give quite as good prints as the original.

G. MANTELL.—In English the best work is Bousfield's "Photomicrography;" see our issue of Nov. 18th, p. 368.

HARVEY. — (1) If you rack your lens out to 22 inches, and place the photograph 22 inches in front of same, it should be merely a question of shifting the lens slightly to obtain sharp definition. Try again, and if not successful, call on us and we will try for you. (2) You can either paste papier mineral or tissue paper on the back of your negative, and when quite dry carefully cut out the paper covering the window, then take a brush charged with thick gamboge and go over the whole of the paper, not touching the window; this will allow the window to print through, whilst holding back the rest. An alternative plan was discussed by Mr. J. McIntosh before the North Middlesex Society, and reported verbatim in our columns a month or two back. This is one of the most valuable processes we have for harmonising harsh negatives, and is just applicable to your case.

A. W. COOK.—We have thrown your slide on the screen, and should say that after the best part of the exposure had been given, there was a slight movement of the camera. The slide is under-exposed, but the shadows about right in density. The probable effect of coupling the oxygen on to the hydrogen tube would be such an explosion as not to leave you to tell the tale.

YELTRAH.—We have not a negative by us such as you describe, but will see if we can make you one.

E. G. K.—Chapman Jones' "Science and Practice of Photography," price 2s. 10d., from our publishers.

NOVICE.—It is utterly impossible to fix any silver prints without alteration of colour.

J. G.—The plate having been well cleaned is coated with collodion.

Ammonium iodide	40 gr.
Cadmium bromide	12½ ,,
Pyroxyline..	50 ,,
Alcohol	5 oz.
Methylated ether..	5 ,,

When the collodion is set, the plate is lowered into a silver bath of—

Nitrate of silver	320 gr.
Potassium iodide	1 ,,
Distilled water	8 oz.
Nitric acid	1 drop.

and moved up and down once or twice, then placed in the dark slide and exposed whilst still wet, and developed with

Ferrous sulphate	300 gr.
Glacial acetic acid	200 minims.
Spirit	½ oz.
Distilled water	10 ,,

The developer is flowed on the plate, and when developed sufficiently, the plate is fixed with hypo. You had better obtain some manual on the subject. Jabez Hughes' "Principles and Practice of Wet-plate Photography," is good.

J. S.—Many thanks for MSS.

H. H.—A good subject, utterly spoilt by over-printing; it wants about half the depth of colour.

W. BINKS.—Pleased to see any number of prints you send up.

T. W. W. MELHUISH.—We are making enquiries, and will write you.

H. PRESS.—Our publishers can supply you with the book you name.

QUÆSTOR.—The negative is rather hard, and wants printing rather less in a bright light. It is over-toned.

A. SILVER, JUN.—Yes, your print was duly entered.

H. DEAN.—Next year we shall try and print the MSS. for lantern slides.

C. H. C.—(1) The diaphragms are marked on Dallmeyer's decimal system, and correspond to *f*/8·5, *f*.10, *f*/12·25, *f*/16, *f*/22·3, *f*/32. (2) The brown tinge is probably due to not washing the negative thoroughly free from hypo, and then not washing sufficiently between the mercury and ammonia.

H. HOLT.—If you will send us the reproduced negative we shall be much obliged. No, "Our Lantern Screen" appears on the last Friday in the month as a rule, but will be put off till January 6th, in consequence of Christmas week.

IGNORAMUS.—You may not have properly adjusted your lamp, etc. Try moving your lamp further from or nearer to the condensers till you get the maximum illumination on the screen; besides, you do not say what size disc you are using. Above six feet is almost an impossibility.

SENLAC.—The 5 by 4 lens you name will cover a quarter-plate sharply, but as depth of focus decreases as the aperture increases, it obviously possesses less depth than when working at *f*/8. No doublet lens can be as good for landscape work as a single lens, because there are more reflecting surfaces, but when a doublet is stopped down to *f*/22, it is practically equal in every respect to a single lens.

T. S. D.—Very glad to welcome you back again to the fold. The numbers you want are August 5th, 12th, 19th, 26th, September 9th, 16th, 23rd, 30th, Oct. 7th, 21st, November 18th.

CYCLO.—(1) A very weak bath composed of

Potassium ferridcyanide	5 gr.
Ammonium sulphocyanide	10 ,,
Distilled water	2 oz.

will help you. (2) Black points caused probably by particles of metal in the paper itself, reducing the silver. (3) See answer to T. S. D. above. (4) We will write short leader for next week on this.

J. B.—The thick collodion will not affect the printing qualities of the negatives. Fluoric acid is nasty stuff to handle; it can be obtained commercially in indiarubber bottles. The best way to use it is to measure out 15 drachms of water in a 2 oz. measure, and pour one drachm of acid into it, then dilute at once to 10 oz. of water, and place in an ordinary ebonite developing dish, and as soon as your negatives are stripped throw it away. To make a transparency for duplication of a negative, it is advisable to use an ordinary dry plate, and at a distance of about two feet from a No. 5 Bray burner, with a sheet of opal over the printing-frame, give about ten seconds' exposure, develop in the ordinary way with pyro and ammonia, and the result should be exactly the same character as a negative that is no clear glass, no heavy shadows, but thin and delicate. The hypo was of course a clerical error. We could not alter the date this year, but we will think it over.

A. J. NICHOLLS.—You do not state what pictures you want to copy. If they are coloured pictures, then you must use isochromatic plates. Anyhow these plates would shorten the exposure enormously. If you use a paraffin lamp and lantern plates, the exposure, we should say, would run into hours.

AMATEUR.—It is not so easy to obtain a black tone on chloride paper. The best method is to print under green glass very deep and tone in a bath of

Chloride of gold	4 gr.
Uranium nitrate..	4 ,,
Salt	60 ,,
Acetate of soda	60 ,,
Distilled water	8 oz.

Dissolve the gold and uranium in a little water, add 30 gr. of bicarbonate of soda, and then the other ingredients. The fixing bath should be

Hypo	2 oz.
Salt	1 ,,
Soda	½ ,,
Water	20 ,,

The bath may be used as soon as mixed, and will keep for some time if filtered after use.

J. E. G.—There is no absolutely new photo-mechanical process; there have been several improvements in old ones. Do you refer to Sutton's process?

W. P. HIGH.—The fault is probably in your chimney. Lengthen the chimney, and you will most likely get over your difficulty. You can have no better oil than the best crystal white paraffin.

Sale and Exchange.

RULES.

CHARGE.—**Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided; letter, space, stop, or words, counts as* **one word**; *compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of* 3d. *to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E.C."*

COMMISSION.—*A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* 1s.

PAYMENT.—*All payments are to be by cheques of Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.**, *or a commission of* **2½ per cent.**, *upon the sale price of the apparatus.*

Bicycles, Tricycles, etc.—Cushion-tyred Safety bicycle, ball bearings throughout including steering, with lamp, bell, and all accessories, cost this year £12 10s., will exchange for good rapid rectilinear lens, whole or half-plate, or other photographic goods, or sell £7.—Hilton, 286, Manchester Street, Oldham.

Dark Slides.—Dark slides, five half-plate Instantograph, with quarter carriers, 7s. 6d. each, 6s. 6d. without carriers; and four quarter Instantograph slides, 4s. 6d. each, quite perfect; approval.—Thomas, 2, Pelham Road, High Road, Ilford, E.

Exposure Meter, etc.—Watkins' exposure meter, new, 10s. 3d.; Lancaster's combination rectigraph lens, quarter-plate, 23s.—Norman Blake, Bedford.

Hand-Cameras, etc.—Swinden and Earp's hand-camera, cost £7 net, prics £5, as new.—A. Bean, Snaith, Yorkshire.

Hand-cameras. A quite new No. 5 Eastman's Kodak, 7 by 5, with plate arrangemente and a staff tripod for same, film for 40 exposures, only two or three used, cost £16 9s. 6d. a few months ago, £10; a Fallowfield's Facile, R.R. lens, and staff tripod, cost £6 5s., £3 10s.—Apply, 25, Lansdowne Crescent, Notting Hill.

Fallowfield's Facile, landscape lens, shutter, finder, carries 12 quarter-plates, 52s.—C. Fidler, jun., Friar Street, Reading.

Lantern Apparatus.—Pair (Newton's) quadruplex lamps, equal new, 30s., or sell singly.—Iliff, 11, Martineau Street, Birmingham.

Lantern screen (Dyson's washable), 8 ft., price 15s.—Howard, 16, Perryn Road, Acton.

For sale, 40 photographic slides for lantern, also double carrier. What offers?—Apply, 693, High Road, Lower Tottenham.

First-class brass lantern front, best lens, and 4¾ in. condenser, 50s.; three best quality half-plate dark slides, 25s.; 12 by 10 wide-angle rectilinear, 70s.; half-plate rapid rectilinear, 22s. 6d.—59, Keppoch Street, Cardiff.

Lenses, etc.—Whole-plate rapid rectilinear lens, iris diaphragms, flange and cap complete, almost new, 30s.—Apply, H. M., 111, Shakespeare Road, Herne Hill, S.E.

Sets.—Lancaster's half-plate Instanto, three slides, lens, shutter, and stand, complete in bag, cost £5 19s., good as new, 70s.; Lancaster's best half-plate square bellows, five brass-bound slides, Dallmeyer R.R. lens, leather case, and stand, complete, cost £15 15s., sell £9; Burr's 12 by 10 W.A. doublet, 70s., worth double; Dallmeyer 6 by 5 R.R., 60s.; whole mahogany studio camera, leather bellows, one double, one single slide, cost £7 10s., sell 50s.; 12 by 10 landscape lens, rack and pinion, as new, 30s.; 10 by 8 Underwood's best square bellows camera, rack and pinion, two slides, R.R. lens, iris stops, and case, complete, £8, cost £14.—Parlby, Cradock Street, Swansea.

Quarter-plate Instantograph camera, lens, shutter, tripod, three double backs, focussing cloth, canvas case, 50s.—Harold Phœnix, 323, Shoreham Street, Sheffield.

£12 will purchase the following high-class apparatus: Watson's Acme camera, 13 by 18 cm. (7 by 5¼), all possible movements, double extension, three double dark slides, turntable, three-fold tripod, stand, instantaneous and time shutter, Ross' whole-plate rapid symmetrical, whole plate wide-angle lens, waterproof case, splendid condition, cost £21.—Address, Robert Teglio, Mevagissey, Cornwall.

Lancaster's International half-plate, two dark slidee, stand, and splendid aluminium lens, Thornton-Pickard shutter and case, £5, or offers; also Lancaster first quality enlarging lantern, 6 in. condenser, achromatic, with rack and pinion movement, only been used once, £5 10s., or offers.—Temperton, 59, Corporation Street, Manchester.

Sundries.—Will exchange "Life of Lord Beaconsfield," five vols., new, handsomely bound, for Optimus R.R., 7 by 5, or for lens by any other good maker.—J. Pitman, Gosberton, Spalding.

WANTED.

Cameras, etc.—Wanted, enlarging and reducing camera, principal use, copying pictures, must take up to 10 by 8 negatives.—H. F. Linging, 225, Beaconsfield Street, Newcastle-on-Tyne.

Wanted, Lancaster's quarter-plate Omnigraph, best pattern.—M., 7, Victoria Street, Barnsley.

Lantern.—Wanted, a good magic lantern in exchange for carte de-visite portrait lens, Presto camera, takes good photographs, and changing bag.—C. Eddington, Castle Street, Thornbury, Glos.

Lenses, etc.—Wanted, lens by first-class maker for quarter-plate camera.—Hynes, Customs, Ramsgate.

Wide-angle 6 in. rectilinear or a 6 in. combination lens, iris diaphragms, for cash, on approval, must be cheap and good; also a leather case to hold half plate camera, three slides, two lenses.—Address, J. Tuxworth, 72, Annesley Street, Great Grimsby.

Rollholder.—Wanted, a 5 by 4 rollholder, must be modern and in excellent condition.—Brock, Winnington Park, Northwich.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

Bargains in Hand Cameras.—No. 5 folding Kodak, carries fifty-four films, rapid rectilinear lens and shutter, extending leather bellows, covered morocco, finder, etc, £9 9s., cost £13 13s.; Luzo hand-camera by Robinson, Regent Street, 100 films, rapid rectilinear lenses, shutter, finder, in leather case, as new, £2 12s. 6d.; Optimus Minimus hand-camera, quarter-plate, for twelve plates, Optimus Euryscope lens, roller blind shutter, two finders, bag changing, covered morocco, finest condition, £4 17s 6d.; Talmer hand-camera, carries twelve quarter-plates, fine portrait or view lens, shutter, finder, bag hanging, etc., finest condition, 47s. 6d.; Key hand-amera, by Platinotype Company, rapid rectilinear ens, shutter and six slides, size quarter-plate, finest rder, £4 12s. 6d.; C Daylight Kodak, rapid rectiear lens, rotating stops, shutter, finder, etc., covered morocco, carries 24 films, quite new, £3 15s.; No. 4 Kodak, as new, size 5 by 4, carriee 100 films, fine rapid rectilinear lens, instantaneous shutter, in solid leather case, £7 7s.; No. 3 Kodak, as new, size quarter-plate, carries 60 films, rapid rectilinear lens, instantaneous shutter, take £5 7s. 6d.; Optimus Magazine, very finest order, Optimus rapid rectilinear lens, carries twelve quarter-plates, roller blind, shutter, focussing adjustment £5 5s; Rouch hand camera, quarter-plate rapid rectilinear lens, roller behind shutter, bag changing, as new, £3 17s. 6d.; Blair's 5 by 4 hand-camera, good lens, time and instantaneous shutter, two finders, rack focussing, three double dark-slides, as new, £3 3s.; Kodak No. 1, best R.R. lens, carriee 100 films, best order, in leather case, 40s.; Fallowfield's Facile, fitted rapid rectilinear lens, carries twelve quarter-plates, ae new, £3 17s. 6d. All above are warranted ae described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Cameras and Sets.—10 by 8 camera fitted all latest improvements, back and front extension, for wide-angle pictures, leather bellows, revereing back, rising and falling front, two double slides, grand condition, take £6 10s. lot; whole-plate Optimus Rayment camera, double extension, leather bellows, rising, falling, and brass fronts, three double dark slides, Optimus rapid rectilinear lens, Waterhouse stops, three fold stand and case, lot as new, £11 5s.; whole-plate camera (British), by Chapman, double extension, leather bellows, rising front, etc., very fine rapid rectilinear lens, Waterhouse stops, three double slides, folding stand and case, grand lot, as new, £8 5s.; half-plate camera by Houghton, Holborn, double extension, wide-angle movement, rising and falling front, leather bellows, etc., rapid rectilinear lens, iris stops, three double slides, three-fold stand and case, as new, £6 10s., warranted; half-plate Spanish mahogany camera, by Lonsdale, Leeds, wide angle movement, double extension, leather bellows, etc., rapid rectilinear lens, Waterhouse stops, double dark slide, and folding stand, £4 10s.; Lancaster's half-plate 1892 instantograph camera, all latest improvements double extension, leather bellows, etc., double slide, quarter carrier, very fine rapid rectilinear lens, iris stops, and folding stand, set complete, 75s.; half-plate camera, by Percy Lund, back extension, conical leather bellows, three double slides, rapid rectilinear lens, shutter, folding stand, and case, as new, take £4 10s.; quarter-plate Shew's Eclipse pattern camera (pocket), reversing back, leather bellows, etc., three double slides, rapid rectilinear lens, rotating stops, and roller blind, shutter, fine lot, as new, £2 12s. 6d.; quarter-plate instantograph camera, lens, iris stops, double slide, and folding stand, 27s. 6d.; quarter-plate Le Merveilleux set, by Lancaster, complete, 15s.; quarter-plate extending camera, best order, good lens, two double hook-form slides, and folding stand, 17s. 6d. All above sets guaranteed in every detail as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Lenses.—Optimus No. 3 B portrait lens by Perken, Son and Rayment, as new, Waterhouse stops, rack focussing, to cover whole-plate, take £6 15s.; Optimus portable symmetrical, size 9 by 7, rotating stops, covers well, works *f*/11, as new, 65s.; 9 by 7 Optimus rapid Euryscope lens, Waterhouse stops, moveable hood, grand definition, as new, £5 5s.; whole plate portrait lens, Waterhouse stops, rack focussing, covere well, as new, 65s.; whole-plate Laverne wide-angle rectilinear, rotating stops, as new, 30s.; whole-plate rapid rectilinear lenses, by Parker, Holborn, covers well to edges, Waterhouse stops, moveable hood, as new, 45s.; quarter-plate Optimus detective camera lens, by Perken, Son and Rayment, Waterhouse stops, as new, 27s. 6d.; half-plate Lancaster's rectigraph lens, thorough order, covers well, Waterhouse stops, take 32s. 6d.; half-plate Lancaster Instantograph lenses, iris etops, and instantaneous shutter, 15s.; half-plate Ross' rapid symmetrical lens, as new, fine definition, Waterhouse stops, £3 17s. 6d.; Ross' No. 2 portable symmetrical, rotating stops, 4 in. focus, finest order, 42s.; Shew's C. D. V. portrait lens, rack focus, Waterhouse stops, finest condition, 17s. 6d.; Optimus quarter-plate portrait lens, rack focussing, Watorhouse stops, quite new, 21s.; 5 by 4 Optimus rapid rectilinear, by Perken, Son, and Rayment, Waterhouse stops, 27s. 6d.; Swift 5 by 4 wide-angle rectilinear, 5 in. focus, rotating stops, 32s. 6d.; ½-plate hand-camera lens, by Laverne, rapid rectilinear, adjustable focus, 15s., quite new. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street. City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Magic Lanterns and Slides.—Walter Tyler's Helioscopic is perfection of all lanterns, supplied to Indian Government, School Boards, science classes, clergy, and exhibitors throughout the world. Impossible to have lanterns give better definition or more satisfactory results; specially constructed lens which no other lantern possesses.—Walter Tyler, 48, Waterloo Road, London.

Walter Tyler's Best Triples and Biunials are unsurpassed, and perfect in every detail. Good biunials, mahogany bodied, brass fronts, and all improvements, £7 10s.; single lantern, with 4 in. condensers, portrait front lens, 4-wick lamp, complete, in case, 27s. 6d.—Walter Tyler, 48, Waterloo Road, London.

Lantern Lenses.—Specially constructed. Walter Tyler's new Helioscopic portrait combination lantern lens gives the most perfect definition and brilliancy, can be fitted to any lantern, and for excellence cannot he surpassed. No other maker has this lens, which is manufactured expressly for Walter Tyler, 48, Waterloo Road, London.

Regulators and Gauges.—Great reduction, in price. Either can now be had of Walter Tyler for 14s. each. The largest stock of gas cylinders in England. Best seamless eteel, tested and valved, and all sizes at very low prices.

Slides from Negatives and Pictures.—Walter Tyler manufactures and colours slides on the premises, thus ensuring speedy delivery, and prices are most moderate.—Walter Tyler, 48, Waterloo Road, London.

Biunial Lanterns.—If you are in want of a really good biunial lantern, perfect in every respect, call and see Walter Tyler's entire brass fronted, mahogany-bodied, lined with Russian iron, and fitted with new best quality lenses, and sold at a most moderate price. The top lantern will take a 4-wick lamp. These are great bargains.—Walter Tyler, 48, Waterloo Road, London.

Hire Department is now perfect. Largest and best collection of slides in the world; over 200,000 always in stock. Temperance, travels, Scripture, educational, comic, tales, etc. Cheaper than any other house, no extra charge for coloured slides or effects. Special terms for large quantities.—Walter Tyler, 48, Waterloo Road, London

Lanterns and Slides.—If you wish to hire, purchase, or exchange, you cannot possibly do better than go to Walter Tyler, who makes this business a specialite, and you will thus save dealer's and all intermediate profits.—Walter Tyler, 48, Waterloo Road, London.

Second-hand Lanterns and Slides at very moderate prices, also all kinds of apparatue. Send for large catalogue, 420 pages, with instructions for working lanterns of all kinds, and costing an immense sum to produce, sent free for 6 stamps. Small catalogue and second-hand list, post free.—Walter Tyler, 48, WaterlooRoad, London.

Bijou Enlarging Lanterns.—Finest results with Hughes's patent rectangular condensers, half the size of ordinary make, superior definition, proper diffusion of light; scientifically constructed, not commercial; several whole and half-plate for sale, cheap.

The Marvellous Pamphengos.—Finest oil-lighted lantern, perfection, equals limelight, stood the test of over fourteen years against all imitations. Over 3,000 sold; supplied to the Government, School Boards, Science Teachers, the Clergy, and Institutions. Elegant solid brass fronts, high-class lenses, unequalled for definition and brilliancy, from £2 10s. each.

Magic Lanterns, Magic Lanterns.—Largest assortment in the world, cheapest and best, nicely japanned lantern body, 4 in. double condensers, portrait front lenses, rack and pinion, four-wick lamp, in case, £1 7s. 6d. Others more elaborate, but cheap.

The Doewra Triple Prize Medal, highest award, supplied to Dr. H. Grattan Guinness, Capt. C. Selwyn, Madame Adelina Patti, and the Royal Polytechnic, etc.

The Malden Triple; supplied to B. J. Malden, Esq.; unparalleled results; Capt. Chas. Reade, R.N.

Fine Triple Lantern; four set of large diameter lenses, £35, cost £60. Given away.

Special Triple; mahogany, entire solid brass fronts, £12 12s.; a really good lantern, unequalled.

Elegant Mahogany Biunial; brass fronte, £7 10s.; blow-through safety jets, 8s. 6d.; mixed gas jet, 12s. 6d.; Malden double dissolving tap, 12s. 6d.; a number of grand effects; particulars free, before purchasing. Send for Mr. Hughes's grandly illustrated cataloguo, over 180 fine wood engravings, price 6d.; postage 3d.; separate list of 60,000 slides, price 6d.; postage 3d.; pamphlets free; second-hand lists of bargains.—W. C. HUGHES, Brewster House, Mortimer Road, Kingsland, London, N. 50 slides, all coloured, on loan for 3s., in special despatch boxes.

THE CHESHIRE STUDIO, 5, WATER LANE, WILMSLOW.

FOR IMMEDIATE DISPOSAL, a snug little Photographic Business, good dwelling house, large garden, with studio, (portable) containing good stove backgrounds, and other accessories, apparatus, etc. Side entrance. Furniture of house, valuable negatives of the Cheshire "meets," mansions, and churches, specimen frames, etc. All to be sold at a sacrifice. For particulars apply as above.

FOR SALE, a Method to Manufacture Dry Plates, rendering it impossible, with slight attention, to mistake film side in absolute darkness.—Address, H Nunn, St. John's Worcester.

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 — Telegraphic Address: VINEY, LONDON

Offices: 4, Creed Lane, Ludgate Hill, London, E.C.

No 430. Vol. XVI.] FRIDAY, DECEMBER 30, 1892. [Price Twopence.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc, from 10 till 1 o'clock.

Our Views.—Our Lantern Screen—Societies' Reports—Temperature of Solutions—Payne Jennings' Experiments—An Extract—Blisters—A Remedy—Warm Hypo—Baron Rothschild's Collection—Stereoscopic Photography—Cheap Photographs—Artistic Work—Photographs as Pictures—Good Wishes—Durham Camera Club Show—Lombardi and Co.

Leaders.—Winter Work—Rational Development.

Letters.—Packing of Plates (Anderson)—Enlarging (Dresser)—Speed Numbers (Watkins)—Moonlight Pictures (Huggins).

Articles.—General and Photographic Chemistry (Conrad)—Study and Practice of Art in Field Photography (Hinton)—Construction of Twin Lens Hand Camera (Enn. Ess.)—Multiple Coated or Multiple Film Plates (Grant)—The Printing of Clouds (Bibby)—Winter Photography (Hodges)—On Silver Hemisulphate (Lee)—A Photographic Method of Mapping the Magnetic Field.

Societies' Meetings.—Brixton and Clapham—City of London College—Ipswich—Leeds—Newcastle—S. London.

Editorial Department—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C. *(All communications should reach the Editor on Tuesday.)*

Terms of Subscription—

United Kingdom	Six Months, 5s. 6d.		Twelve Months, 10s. 10d.		
Postal Union	"	"	6s. 6d.	"	" 13s. 0d.
Out of Postal Union	"	"	7s. 9d.	"	" 15s. 3d.

Trade Advertisements *are received up to Tuesday morning.*

Publishing Department.—All letters containing Subscriptions, Orders, Remittances, Sale and Exchange Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, Hazell, Watson, and Viney, Ld., 1, Creed Lane, Ludgate Hill, London, E.C. Sale and Exchange *Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.*

"Amateur Photographer" Monthly Lantern-Slide Competition, No. 44.—Latest day, January 14th.—*Prizes:* Silver and Bronze Medal, with ribbon and clasp. Two slides to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, Amateur Photographer, 1, Creed Lane, E.C. (Prizes will be announced and slides reproduced and criticised in the Amateur Photographer Supplement, January 28th, 1893).

This should be "Our Lantern Screen" number, but unfortunately our printers tell us that, after working night and day in consequence of the annual rush at Christmas, it is absolutely necessary that the machines, both human and metal, should have a rest, and therefore they would be obliged if we could put off the supplement for a week. To this we have consented, as it will give our readers—beg pardon, we mean it will give us—a chance to get over the Christmas festivities easily.

Is it true? In our issue of the 9th inst. we state:—"We intimated last week that societies' meetings and exhibitions are always troublesome to deal with, and must be introduced at the expense of matter of more permanent and wide-spread interest. Probably all the photographic press will ere long recognise the necessity of reducing such items to a mere synoptical report. We are ourselves working in that direction, and believe our readers will not, in the end at least, disapprove."

Now our provincial contemporary follows suit. For once they follow our lead.

In "Dry-plates," the gratuitously circulated organ of the Cadett plates manufacturers, some attention is given to the subject of temperature in connection with dark-room operations. The writer says, "Our testing with Hurter and Driffield's instruments is now always done with the developer at a temperature of 65 deg. F., and we cannot answer for the speed numbers giving a correct result with our formula if the temperature of the developer be down to a low degree in a cold dark-room." Messrs. Cadett and Neall not only have the dark-room carefully heated, but use an otherwise unusually large portion of developer in order to avoid, as far as possible, a decreasing temperature in the solution itself.

Some interesting facts are recorded, including an experiment by Mr. Payne Jennings, in which the possible advantage to be gained by heating the developer to even 90 deg. F. in case of known under-exposure is pointed to. An article which appeared some weeks ago in *Photographic News* on this subject is reproduced in the print referred to above, and at the present season of the year is well worthy of notice.

We have, for instance, the following statement:—"We have known even experienced professional photographers to be misled on the first cold day at the approach of winter, by the slowness with which the normal developer acts at such a time. A plate has been exposed on a sitter, and as, after a time which had previously sufficed for the development of the image, very little is to be seen on the film, a change in the light is assumed, and under-exposure taken for granted. A second plate is therefore exposed for a considerably longer time. This time the

image comes up, but very weak. It is in short, an over-exposed picture, much under-developed." Possibly a great many of our readers have dark-rooms either detached from their dwelling-house or in some exalted or remote quarter of it, and hence the particular apartment is often very cold and devoid of any ready means of being artificially heated. This is a serious matter for attention, and some simple means of raising the cold air must be found. If the room is not large the burning of a paraffin lamp during the day will often be sufficient to "take the chill off," to say nothing of preventing the bursting of water pipes and bottles when a hard frost sets in. Good reader, take warning in time.

CLOSELY connected with the foregoing thought is the question of blisters on albumenised printing paper. This trouble of "blisters" has been a *bete noir* of the photographer for years past, and is only perhaps less heard of just lately because gelatino-chloride papers are being so largely used when albumenised papers were before the sole printing media employed.

Striving to combat the blister fiend recently, we found some assistance in a slightly heated fixing bath and washing water—not intentionally but by accident. It happened that for a short period we were compelled to work in an extemporised laboratory when the cold-water supply was drawn from a cistern in juxtaposition with a hot-water tank, which for certain purposes was kept at a high temperature. Our so-called *cold* water was therefore nearly always *tepid*, and some at first unaccountable results in work were subsequently traced to the use of the warmer water. A correspondent tells us that when prints blister after or during fixation he, after washing them, dries by heat in front of a fire, and immerses the prints in hot water immediately before mounting, and by this means all but the very largest bladder-like blisters are got rid of.

REMEMBER that hyposulphito of soda should, in cold weather, be always used warm, as the salt naturally lowers the temperature of the water in which it is dissolved.

Our modern advisers can put it much shorter
Than earlier teachers, there isn't a doubt of it
In winter photography use some *hot water*,
At home in your family always keep out of it.

WE understand that Baron Albert de Rothschild, well known as an amateur photographer of no mean ability, is making a collection, for his own private use and enjoyment, of representative works of the more prominent artistic photographic workers. Thus, in the houses of the great, the picture gallery of the future may not be confined to the exhibition of ancient family portraits, grim and dark as the oak panelling around them, nor even to the paintings of modern as well as old masters, but may also find place for the photographic pictures of the new age which is ours. Then comes the thought, what will be the verdict on the best work of to-day when judged by the Davisons, Maskells, and Gales of half-a-century hence?

WELL done, Hackney! Many a pleasant evening and useful demonstration may your new biunial lantern give you. Out of the twenty societies which competed for the prize offered by our contemporary, *The Hand-Camera and Lantern Review*, Hackney with its nine competitors comes off victorious, and carries away the prize, a handsome biunial lantern—a very substantial and useful Christmas present from these nine contributors to their fellow-members.

NOTWITHSTANDING the able and well-intentioned efforts to resuscitate the failing vitality of stereoscopic photography, it seems doubtful whether it is destined to ever become much more popular or more widely practised than it is at present. It has often seemed to us that those who have pleaded for stereoscopic pictures have taken up the wrong lines to advance its cause. It has been argued that because the stereoscopic effect imparts such a reality to the prints, and objects "stand out," so that you feel you could "pick them out," therefore, their pictorial claims are paramount. It must, however, be remembered that the work which astonishes and awakens admiration because of its wonderful similitude, owes its greatness rather to a clever craft akin to jugglery. Imitation may be "sincerest flattery," but it is not art. Stereoscopy is successful, or not, according to the way you look at it. By this we do not make reference to the fact of one's employing a binocular machine by which to view the pictures, but according as we regard it as the clever application of an interesting optical principle, or as one in the motley group of claimants to be called a pictorial art.

SPEAKING of the possibility of good photographs finding a permanent place in private picture galleries, prompts a suggestion on the subject of the commercial value of photographs. We mean those photographs which hope to be regarded as of artistic merit. Amateur photographers will, for some years to come, have themselves to blame for the cheap estimation in which photographs will be held.

THE popular notion is that a dozen photographs each of equal quality can be printed as easily as letterpress copies from type, whilst, as a matter of fact, if the conscientious worker succeeds in getting *one* print from a negative to his satisfaction, it is doubtful whether he ever gets another. Hence, if the particular photographer possess real ability, a finished print carrying his autograph, whereby he implies his approval, should possess for all time a distinct and individual artistic value. It is in this respect better than an artist's signed proof engraving—there will perhaps be some hundred or two engravings, but the photograph may be unique and a duplicate impossible. It follows from this that the signed photo print should be purchaseable only at a fair and not too depreciative figure. Give your photographs away or dispose of them for a few shillings apiece, and the world, which values all things by the price they fetch, will despise even your best work, be its real merit what it may. If your photographs are not worth a picture price, they are certainly not good enough to give away; and if they carry your name with them they will do yourself and your reputation harm.

IF a photograph is sufficiently good to make its acquisition *as a picture* desirable, then it is worth paying for If photo prints are to be sold as scraps, trade-prints, or mere illustrations, then they don't need to carry the artist's—we should say the producer's—name.

To all our readers who have so kindly remembered us this Christmas time with cards and good wishes, we return our hearty thanks, and we regret that it is not in our power to write and return them individually our hearty good wishes and greetings.

ELSEWHERE we give brief details of the open class of the Durham City Camera Club Exhibition, and the Secretary's address, from whom all particulars may be obtained Other societies may well take a lesson from this club, and give free shows to workhouse inmates, etc.

Another well-known West End photographic business is offered for public subscription as a limited company, namely, Lombardi and Co. This old-established concern has been registered by Merriman and Co., 25, Austinfriars, E.C., with a capital of £10,000 in £1 shares. Object, to carry into effect an agreement, made December 7th, between P. Notcutt of the one part and this Company (by H. Ball) of the other part; generally, to carry on business as photographers, artists, etc., etchers, modellers, colour manufacturers, etc. P. Notcutt and Major C. H. Strutt are joint managers, their remuneration being £5 per week each.

It is not often that we see a Sale and Exchange advertisement before it appears in the complete paper, but one has been handed us for perusal this week which is striking at least. A gentleman offers to sell the secret of making dry plates so that it will be "impossible, with slight attention, to mistake film side in absolute darkness." Is this a Christmas joke?

WINTER WORK.

The Christmas holidays naturally suggest snow-pictures for some reason or other, and following our train of thought the proper development of them to give absolutely the best value will occupy a prominent position. We will premise that under-exposure is of frequent occurrence, if not usual, and latitude in development under the circumstances a necessity; this granted, we will go a step further and press the claims of eikonogen as the one developer on which to rely for the requisite assistance.

Professor Eder stated in the "Photographische Correspondenz," some few years ago, that "the action of eikonogen on gelatino-bromide of silver plates is to produce very delicate half-tones and beautiful gradations. It hardly ever fogs plates, and acts very beneficially in relation to their degree of sensitiveness." This was written when little was known of eikonogen as a developer, and experience proves without a doubt that Dr. Eder was right.

With rational use an eikonogen developer will give almost any result desired, a hard negative full of violent contrasts, or one so soft and replete with half-tones as shall satisfy the most exacting requirements of perfect technique. The particular formula we have in our mind is one which appeared in the Amateur Photographer of July, 1890, contributed by Mr. Wilkinson, of the Liverpool Society, a formula we have put to very sincere tests on many occasions; it reads—

(1).

Eikonogen	240 gr.
Sulphite of soda	2 oz.
Water to	30 „

(2).

Washing soda	1½ oz.
Water	10 „

For isochromatic plates take of No. 1, 9 drams; No. 2, 4 drams; adding 3 drams of water. Half a dram of 10 per cent. solution of carbonate of potash will hasten development and give more detail.

Extreme cold seems to have a paralysing effect on eikonogen, and it is well to warm it sufficiently to take off the chill before use in winter weather.

Develop slowly, *i.e.*, don't put in the full strength of accelerator at first, but when detail is well out make your bath up to full strength, avoiding too great density.

As to printing from negatives of snow-scenes, the matter of colour is an important factor. Without being dogmatic it may be said that certain colours for various classes of pictures are, if not necessary, desirable, and it is well to aim as nearly as possible, in printing, for the prevailing tone of the landscape and its sentiment we are endeavouring to represent. Not to put too fine a point upon it, the tone in this instance is grey, and he would be a daring picture-maker who would fix upon a red-toned print as the medium of picturesque expression. Then, after tone comes the method of representing it on paper, and, dismissing bromide, not so much on account of its conventionality as its unsuitability, we find that a rough surface or grained paper will best convey the impressions we have brought away with us from the field, and we endeavour to fix upon the particular kind to give the most satisfactory result. Platinotype is very good, but there is a difficulty in preserving it free from damp and consequent muddiness in this climate of ours, and we turn to a paper that is less known but more suitable for the purpose. This is the "Mezzotype" of the Carlotype Company, a specially prepared rough drawing paper that prints rapidly and gives delightful velvety shadows, if we may use such a term. With this medium and platinum toning, absolute blacks may be secured if desirable, yet it better renders half tone than any other paper we have come across. Concise directions for its use were given in these columns three weeks ago, but subjoined is a formula particularly recommended for blacks and greys.

Dissolve fifteen grains of chloro-platinite of potassium in one ounce of water, and keep as stock solution. When toning take one dram of the above to every ounce of water, adding thereto one drop of nitric acid. Use the bath at about 80 deg. Fahrenheit, and *tone thoroughly*, say ten minutes, or longer when the bath gets weaker. Fix in the normal bath ten minutes. One further suggestion: if you want a strong print, it is a matter of printing deeply; if a grey, print lighter and tone longer, adding more nitric acid.

RATIONAL DEVELOPMENT.

In our issue of the 2nd inst. we published a paper read before the Birmingham Phot. Soc., which has attracted much attention from many of our readers, and so many have asked us how to adapt this to the fixed alkaline developers, that we are compelled to answer them in this short note.

For a typical plate, say a whole-plate, we require 3 oz. of developer. Then take 6 gr. of pyro, if dry, add a little sulphite, about 24 gr., and water 2½ ozs. Flood the plate with this; see that there are no air bubbles. Now measure out the normal quantity of alkali, which we will assume to be 15 gr. of carbonate of soda, add 2½ gr. of bromide, water ½ oz., pour the pyro solution into this, and return on to the plate, rock the dish, and allow development to proceed as far as it possibly will, as directed in the above cited paper. Then add a drachm of citrate of soda or potash solution, made as follows:—

Citric acid	720 gr.
Carbonate of potash	884 „
Distilled water	10 oz.

Or—

Citric acid	720 gr.
Carbonate of soda	1,440 „
Distilled water	10 oz.

To obtain the density, mix a solution as follows: carbonate of soda 1,600, bromide of potash 200 gr., glycerine 1 oz., water 6 oz., or carbonate of potash 924 gr., bromide of potash 200 gr., glycerine 1 oz., water 6 oz. All other manipulations are the same as described in Mr. Simkins' paper.

Letters to the Editor.

PACKING OF PLATES.

SIR,—I read with joy Mr. J. N. Williams' letter in your issue of the 16th inst., and heartily agree with him that something or other ought to be done as regards the plates being packed in packets of four or six each. This week I tried some new plates—not new in the market, but new to me—which were packed in a box in one packet. I opened the lid of my box, and seeing some paper ends sticking up, I pulled them. There was no sign of anything coming out, so I thought I must have had hold of a packet underneath. However, I got it out at last, and thinking that the packet was heavier than usual, I looked into the box and found it empty. The packet contained a dozen plates. Now, if by some accident I had dropped them they would most likely have all been broken, and my box-full ruined. If, as Mr. Williams suggests, makers would pack their plates in packets of two each, one could drop a packet without doing so much damage.

Another point I would draw the attention of your readers to is the fact that on some plate boxes you have the sensitometer number given, in others you do not, or perhaps the sensitometers are different, and you give much too long an exposure. I would advocate a council of all the first-class makers, who should decide a sensitometer between them, and who should affix the same number to all boxes on the label; calling their plates ordinary if the sensitometer, be between, say, 17 and 20, rapid if between 20 and 23, extra rapid if between 23 and 24.

I also agree with what Mr. Williams says about advocating any new operation.—Yours, etc., KENNETH ANDERSON.

* * * *

ENLARGING.

SIR,—I note your article about my remarks on Enlarging, at Blackheath. I said as reported, but am not reported quite right, as what I really said was that when a lens was stopped down to *once* cover, stopping down further did no good, but, in fact, harm, as it caused beginners to under-expose and get hard, black and white enlargements; and when saying so, I was referring to a good lens, not the cheap 10*s.* to 15*s.* one put in many enlarging lanterns, as then one often had to stop down to a small stop, but that was the fault of the *lens*.

What I distinctly say, and can prove, is that, given a good lens, that covers the plate used (mostly quarter-plate), at *f*/8 or *f*/11, then further stopping down did no good, as one was enlarging from a flat surface, and did not require depth of focus unless he had made a mistake in his focus.

All my enlargements this time of the year (when light is bad) are made with a Beck wide-angle rectilinear lens (7 in. focus), the largest stop being *f*/11, and I use it at that stop and get perfect definition.

I do not quite understand what you mean when you say I am wrong, so kindly state what you claim an advantage by *stopping down*, with a good lens, so that I can answer it, as it is easy to say one is wrong, when you have not to prove it.—Yours truly,

A. R. DRESSER.

[If a lens has a curved field, and many good lenses have, stopping down will improve marginal definition.—EDITOR.]

* * * *

SPEED NUMBERS.

SIR,—The Britannia Works Company, in your issue of the 16th, find fault with a comparison of speed between their white label and medium isochromatic plates which was copied from a table issued by me.

These speeds were the results of tests made in the early summer, and may not *now* be correct, as medium isochromatic plates have since been lowered in price. I shall make further tests before a new edition of my instructions comes out. The Ilford makers proceed to ask users of their plates to "discredit entirely any speed numbers which may be applied to them by anyone, and to rely wholly on our published details of relative speeds."

This kind of advice has passed muster for a long time, but users of plates are no longer satisfied to open their mouths and shut their eyes and see what the plate makers will send them.

Allow me, as one who has made special tests of plates from makers all over the world, to say that it is utterly unsafe to trust to a maker's statement, even of the relative speed of his own plates, and to advise users to rely chiefly on their own tests. I do not claim that the speed numbers I give represent anything more than my own test of the samples I have tried.

This variation does not arise from any wilful intention on the part of the makers, but simply from the difficulty in making different batches of emulsion exactly the same speed. The remedy, of course, is to mark each box from an actual test of speed, and my remarks do not apply to those makers who have adopted the Hurter and Driffield system, as these numbers are a fairly satisfactory guide to exposure, remembering always that they are no guide to the "density giving" capacity of the plate, and that a plate marked with very high H. and D. numbers may possibly give such a weak image as to be far inferior to a "slower" plate, even for shutter work.

I may mention that I have used the Ilford medium isochromatic plates with satisfaction for almost all my season's work. There can be no *absolute* ratio of speed between a given isochromatic and a given ordinary plate. It varies according to the light they are used in. This is pointed out in the Ilford Company's own book.—Yours truly, ALFRED WATKINS.

Hereford, December 24th.

* * * *

MOONLIGHT PICTURES.

SIR,—Kindly permit me to dissent from the opinion expressed in Editorial Notes of 16th inst. that moonlight effects are not legitimate photographic pictures.

The difference between moonlight and sunlight, I presume, is only the varying intensity of the light. If by shortening exposure, and suitable development and printing, we can secure a moonlight effect, why should we not? In what way is it more a fraud than masking part of a picture to print clouds to their proper apparent depth?

A good moonlight effect in photography is probably as true to nature as most photographs, and I cannot see why we should go beyond the effect to the means employed in order to justify the tion.

Surely it is not suggested that the case of a sham historic scene is a parallel? In such an attempt no school-boy could fail to be struck with a sense of fraud; in the other case an acquaintance with photographic procedure is necessary in order to know that it is not a real photograph of a moon-lit scene.

Personally, I hold most emphatically that any effect true to nature is justifiable where the object is a picture pure and simple, and that there is no reason whatever why the particular method employed to obtain such effects should be even commented upon.—Yours, etc., J. W. HUGGINS.

Affiliation of Photographic Societies.—Meeting of delegates, December 16th, Mr. W. Bedford (P.S.G.B.) in the chair. Two more societies—the Hackney Photographic Society and the Cheltenham Amateur Photographic Society—were announced as having become affiliated. Mr Marchant (North Middlesex P.S.) brought forward the report of the sub-committee appointed to make recommendations with regard to the lectures on photogravure. The report contained a suggestion that a charge of one shilling for the course be made to members of affiliated societies, and five shillings to outsiders; and that the secretaries of the various societies should ascertain as nearly as possible how many of their members were likely to attend, so that arrangements could be made accordingly. Owing to circumstances that had transpired since the report was drawn up, the matter was referred back to the committee, who were instructed to arrange, if possible, to hold the lectures in the month of February, Friday being suggested as the most convenient day, and one which would not clash with any photographic meetings. It was proposed by Mr. Steele (Leeds P.S.), seconded by Mr. Mackie (North London P.S.), and carried, that the whole question of the lectures should now be left in the hands of the sub-committee to carry the matter through. Mr. Steele (Leeds P.S.) and Mr. Walker (Leeds P.S.) gave particulars of a lecture on photogravure delivered in Leeds; the former also suggested that it should be strongly urged upon the various societies, that they should provide a set of lantern slides for circulation. His society had taken the lead in this matter, although hostile critics had styled them fossilised, and he was rather surprised that some of the younger societies had not taken the matter up. He trusted that no opportunities would be lost of appealing to the secretaries to bring this matter up.

General and Photographic Chemistry.—XIII.

By E. C. Conrad, F.C.S.

THE NON-METALLIC ELEMENTS AND THEIR COMPOUNDS.

(*Continued from page* 400.)

Hydrocyanic Acid, Prussic Acid, HCN or HCy=27.—M.: The anhydrous acid can be prepared (1) by passing a series of electric sparks through a mixture of nitrogen and acetylene, Eq.: $N_2+C_2H_2=2HCN$; (2) by passing dry sulphuretted hydrogen gas over dry mercuric cyanide, gently heated, and collecting in a cold receiver; Eq.: $H_2S+Hg(Cn)_2=HgS+C2HCN$. An aqueous solution of this acid is best prepared by heating powdered potassium ferrocyanide with dilute sulphuric acid; Eq.: $2K_4FeCy_6+3H_2SO_4=6HCy+K_2Fe_2Cy_6+3K_2SO_4$. The flask in which the decomposition takes place must be connected with a Liebig's condenser supplied with a stream of cold water. P.: The anhydrous acid is the most powerful poison known; a few drops of the liquid or a little of its vapour producing instant death. It is a colourless volatile liquid of S.G. 0·7058, and boils at 26°C., and freezes at −18° C. It has a powerful characteristic odour resembling peach blossoms. The anhydrous acid soon decomposes, but it mixes with water and alcohol in all proportions, and its solution can be kept without decomposition for some time if not very strong and if mixed with a little hydrochloric acid. The strength of the prussic acid solution used in medicine is 2 per cent., and it is given in very small doses. Many vegetable substances produce prussic acid by fermentation, such as bitter almonds, kernels of plums and peaches, and the leaves of several plants. Hydrocyanic acid forms a large number of single and double salts called cyanides. Of these the salts of the alkali metals, the alkaline earths, and mercury cyanide are soluble in water. The cyanides of the heavy metals are insoluble in water, but mostly dissolve in solutions of potassic cyanide, forming double cyanides. *Tests.*—Many cyanides decompose on heating, or by the action of acids giving off cyanogen gas or hydrocyanic acid. A solution of the acid or a soluble cyanide gives a white precipitate with silver nitrate soluble in ammonia or potassic cyanide. Scheele's test is carried out by adding a few drops of ferrous sulphate solution to the liquid to be tested, and an excess of caustic potash, agitation, and exposing to the air for fifteen minutes (to oxidise some of the iron) and adding excess of hydrochloric acid, when Prussian blue is formed in the presence of a cyanide. The most important metallic cyanides are the following:—

Potassium Cyanide, KCy.—Oc; This compound is often produced in considerable quantities in blast furnaces and whenever any organic substance capable of giving ammonia by destructive distillation is heated with potassium carbonate in a closed vessel. M.: Eight parts of potassium ferrocyanide are rendered anhydrous by gentle heat and mixed with three parts of dry potassium carbonate placed in a red-hot earthen crucible, and the fused mass stirred until gas ceases to come off, it is then allowed to rest, and the clear fluid portion decanted off and allowed to solidify. Eq.: $K_4FeCy_6+K_2CO_3=5KCy+KCyO+Fe+CO_2$. The pure compound can be prepared by burning potassium in cyanogen gas, or by passing the vapour of hydrocyanic acid into an alcoholic solution of potash. P.: The pure salt occurs in colourless crystals, and the commercial variety in white opaque lumps. The principal impurities contained in the latter are cyanate and carbonate of potash, which do not interfere with its general uses. Potassium cyanide smells of bitter almonds, is deliquescent, very soluble in water, but only slightly in alcohol. Its solution has an alkaline reaction, and gives off an odour of hydrocyanic acid in the air; it is decomposed by the carbonic acid of the air, and on boiling, is converted into potassium formate and ammonia.

Potassium cyanide is a most poisonous substance, and must always be used with great care; the symptoms of poisoning are said to be frothing at the mouth, rush of blood to the head, bleeding from the nose, giddiness, and partial blindness. The best antidote is a mixture of a solution of ferrous sulphate with one of ferric chloride, together with magnesia or sodium carbonate. An application of a stream of cold water to the spine may stimulate the system and give time for the antidote to act; emetics or the stomach pump should also be used, strong coffee and the use of smelling salts are also useful. U.: Potassium cyanide is largely used in electro-plating, gilding, etc. U.P.: As a fixing agent in the wet process, it acts by converting the silver halogens into soluble double cyanides. It is also used to reduce the density of negatives and silver prints. It is a solvent of gold and silver, and also acts on gelatine.

Potassium Ferrocyanide, yellow prussiate of potash, K_4FeCy_6.—M.: (1) By the action of ferrous hydrate on potassium cyanide, Eq.: $FeH_2O_2+6KCy=2KHO+K_4FeCy_6$. (2) A solution of potassium cyanide with metallic iron gives the same compound, and if the air is excluded hydrogen is given off; Eq.: $6KCy+Fe+2H_2O=K_4FeCy_6+2KHO+H_2$. Commercially, this compound is manufactured by heating, in iron pots, potassium carbonate and iron filings, and adding animal refuse such as feathers, hair, horn, or leather parings, etc.; potassium cyanide and oxide or sulphide of iron are formed, and by the addition of hot water, react to form the ferrocyanide.

(*To be continued.*)

Hackney.—Ordinary meeting held on 20th inst., Mr. R. Beckett in the chair. Several new books were added to the library. The Hon. Sec. made an appeal for (voluntary) financial assistance for Weir, a professional photographer whose cause had been taken up by *Photography*, which was responded to. Some gummed labels, numbered, were shown and approved of, made by Vevers. The Hon. Sec. announced that the Society had become affiliated to the Photo. Society of Great Britain, and that the society had won first prize in the Competition of Societies, promoted by the *Hand-Camera and Lantern Review*. This was heartily received. Mr. W. L. Barker and Mr. Wire handed round work done on Paget print-out opals and plates respectively, fair results being obtained. Mr. Cross showed a negative which had black marks over it. The Chairman said these were due to metallic contamination, which Mr. Cross thought was the case. Mr. Hudson showed a taper-holder, marked in inches, which he used for burning magnesium ribbon. By this method he could mark off exactly the quantity of ribbon he wished to use. Mr. Paget, of Mr. C. A. Rudowsky's, then showed and explained the working of their electrical retouching apparatus. The vibration caused by the electricity made stippling over the film, which facilitated the retouching. Owing to the absence of a proper negative the full value could not be estimated, but it will later on be tried. Mr. Paget showed a flash-lamp Mr. Rudowsky was bringing out, in which the powder was blown through upwards, and a continuous exposure of twelve secs. could at will be obtained; after this negatives and transparencies on mica were passed round. They were not yet on the market, owing chiefly to their high price, but there was a great advantage, as, being so very thin, they could easily be printed from either side. In answer to questions, Mr. Paget said they would not chip. Hon. Sec. then announced that the next meeting would be on January 3rd, a smoking concert at club premises.

Study and Practice of Art in Field Photography.

By A. HORSLEY HINTON.

XII.—FIGURES IN THE FIELD, AND SOME CONCLUDING REMARKS.

We can scarcely bring the present series of chapters to a close without some brief reference to that which if not actually belonging to landscape photography is yet oftentimes so closely connected with it as to be inseparable therefrom. We refer to the inclusion in the landscape picture of animals and human figures. In the field, though not of the field, figures will sometimes assist the sentiment of the landscape in an astonishing manner, but are equally capable of marring the effect, if not properly understood and managed.

Given a subject in which there are certain figures, such as "Haymakers," "Gleaners," and the like, the idea of the picture is probably chiefly dependent upon these, and the principal interest centres on them, and hence they should be of sufficient size to give them importance and escape insignificance, and, no matter how beautiful the surrounding scene, its beauty is wasted and thrown away, because interest and attention are absorbed in the characteristic figures and do not care to take notice of anything else. For this reason, therefore, it is desirable that if the figures (and the same applies in the case of a group of cattle or sheep) are comparatively near to the camera, and therefore of a size which gives them importance, then the landscape scene should be of a quiet and unobtrusive kind that shall in no way disturb the interest or lead the eye from the figures.

It must not, however, be supposed from this that the treatment and arrangement of the landscape can be lightly considered or disregarded, for if it does not rightly combine and harmonise, or if it contains any objectional feature or evidence of careless manipulation, it will, for this very reason, disturb attention and the fault or imperfection arrest the eye. We have, however, in an earlier chapter devoted some time to the consideration of a centre of interest, and the arrangement of lines and masses so as to lead towards it, and in the present case the figures become that centre of interest, and all that has been said aforetime now applies.

There is another aspect in which figures and animals must be regarded in landscape work, and one in which they come more legitimately within the scope of our subject proper. In the previous cases cited, such as "The Haymakers," the figures may be of such importance as to belong to that class of work known as genre or figure subjects, with which it is not our present business to deal, but it will often happen that a field subject will be selected and decided upon for its own sake, and would in itself, as a "pure landscape," be complete and satisfactory, and yet there shall be somewhere grazing in the distance the quiet flock of sheep, tiny rounded forms of lightish tone, mere insignificant spots of light; they might almost be round boulders scattered over the grass, and yet, all unimportant as they seem, they will have a use in the picture, carrying small spaces of light across the shadowy margin of the meadow, sometimes forming a winding line, singly or in small groups, giving the idea, by their diminishing size, of distance.

Amongst the fringe of darker rushes which skirt the river is seen, perhaps, a small light patch. It suggests the curve of a bending back of a stooping figure—may be, the light of a drab smock or coarse shirt—and although at the distance there is little form indicated, we presume it is a man landing a fish or tending his line and bait. It constitutes a quite important little matter in the picture, and yet it could hardly be disputed that the landscape would have been complete without him. But look again in another direction, where the land lies very flat, and only, perhaps, a narrow belt of low trees or a slight rising ground separates a strip of water and swamp from the sky. Heavy clouds hang like a dark canopy, and their lower edges range in long horizontal darker lines one above another. Here and there the shadowy masses appear drawn down towards the earth, almost vertically, and show where rain is falling a mile or two away, and the whole scene is one of dreariness and solitude. Here no figure, no animal life is wanted. On the contrary, their presence would in probability destroy the impression and prevent the full realisation of the feeling of loneliness which the scene is felt to convey.

Figures as we meet with them in the field may overwhelm the landscape interest, and constitute "figure subjects;" secondly, they may directly and palpably assist the sentiment of the subject; thirdly, they may be of use, but so inapparently that their utility is hardly realised until they have been removed; fourthly, they may interfere with the feeling and mar the whole.

To include such items or to introduce them in just the right capacity to bring them nearer or leave them more remote, will require no small amount of discernment, practice, and knowledge on the photographer's part, and more errors are committed by their introduction than by their omission, so that we should recommend the student, if he feel uncertain as to the desirability of any certain figures, to resign himself to their loss, and leave them out of the picture altogether; in this connection a sin of omission is less fatal than of commission.

When figures are introduced in order to duly subserve and assist the landscape, it is a too common fault to exhibit a total indifference as to what the character of the figure may be, and the most conventional of men in modern costumes are often made to do duty as crossing a bridge, or opening a gate, or sitting on a style, to say nothing of the barbarous custom of making our companion who has walked with us and helped carry the camera, or the lad whom we have hired for the same purpose, stand in such and such a position in order that we may introduce a figure. Even though the figure be only required small and inconspicuous, it should nevertheless be a matter of serious care that the dress of the figure and its entire character be such as we might expect to meet on the spot, and must be free from the taint of vulgar civilisation—a hansom cab in a country lane will not be more inappropriate than the well-cut clothes and hard hat of a conventional figure or a well-groomed carriage horse in a picture of water meadows and flowery fields. The figures must be picturesque and typical.

With the deliberate posing of the figures we need not here concern ourselves, because we are supposing that they are sufficiently small and subservient to the landscape that so long as their position is suggestive of doing something, occupied in some way, we need not be very careful. We may, however, suggest that as we are in no way dependent upon facial expression, a man's back will often serve our purpose quite as well as his face, and by directing his gaze quite away from ourselves and the camera, we shall evade many difficulties which might otherwise arise; but above all things do not be enticed into getting cows and sheep and rustic figures into your landscape picture merely for the sake of having them there. If you are intent upon landscape work—and it is a wide enough field to walk in for many a long day to come, admit life only when you feel you want it and that it will be helpful; know beforehand, if possible, the precise *reason why* you will drive the sheep into such a place, and *what purpose* you have in asking yonder rustic to stand or crouch here or there or in such and such a manner. Thus you will assume the intelligent command of your materials, but if you include the man or sheep simply because, happily or unhappily, they happen to be there, or only because you "like to get some life into a picture," then your circumstances and caprice are governing you, and successful pictorial result, if achieved, will be the outcome of chance.

In the foregoing chapters we have endeavoured to seize some

Now Ready, of all Booksellers. 740 pp. Cloth, 3s. 6d.

HAZELL'S ANNUAL, 1893, contains about 4,000 original articles, written by eminent specialists, on every topic of current and prospective interest, at home and abroad, in every department of human activity.

HAZELL'S ANNUAL, 1893, contains THE YEAR'S HISTORY IN ALL PARTS OF THE GLOBE.

HAZELL'S ANNUAL is every man's companion and guide. "When in doubt consult 'Hazell.'"—*Pall Mall Gazette.*

PARLIAMENTARY SUBJECTS include Complete Biographies of every member of the New House of Commons, the House of Lords, and of the Privy Council, with special articles on Parliamentary Procedure, party changes since 1886, the progress and present position of Home Rule, and a record of work of the last two Sessions.

THE LABOUR MOVEMENT OF 1892 throughout the whole world is given in concise form, with the work of the Commission, a List of Trades Unions, and Articles on Land Nationalisation, Socialism on the Continent, State Pensions, etc.

NEW ARTICLES are included on Aërial Navigation, Anarchism, Bimetallism, Building Societies, Chicago World's Fair, Coal Supply of the World, the Chamber of Arbitration, London Teaching University, Metropolitan Water Supply, One Man One Vote, the Pamirs, Proportional Representation, the Referendum, Uganda, Vivisection, and Women's Suffrage.

FOREIGN AFFAIRS. Concise Histories of the year in every foreign country are given, and articles on Foreign Armies and Navies, with sketches of Foreign Political Parties.

COMMERCE. See Trade, English and Foreign, Agriculture, Banks and Banking, Insurance, Mercantile Marine, Stock Exchange.

London: HAZELL, WATSON, & VINEY, LD., 1, Creed Lane, E.C.

NOW READY.

Crown 8vo, 202 pp., bound in scarlet cloth, gilt, price **3s.**

STUDIES IN PHOTOGRAPHY.

By J. ANDREWS, B.A.

ILLUSTRATED WITH SIX COLLOTYPES.

CONTENTS—

Introduction—Artistic Photography—Art in Relation to Photography—Naturalistic Photography—Photography and Colour—Light—The Artistic Use of a Hand Camera—Composition—Light and Shade—Perspective—Photography and Science—The Study of Nature—The Study of Art—Portraits—Atmosphere—Five Photographic Factors—Round About Jersey with a Camera.

London: HAZELL, WATSON, & VINEY, LD., 1, Creed Lane, London, E.C.

PHOTOGRAPHS OF THE YEAR.

THE BOOK CONTAINS

TWELVE REPRODUCTIONS

Mounted on 15 by 12 Boards, of

NOTABLE PHOTOGRAPHS

IN THE

Pall Mall Exhibition of the Photographic Society of Great Britain,

With Descriptive Letterpress by A. HORSLEY HINTON.

Published at 10s. 6d. Carriage Free.

London: HAZELL, WATSON, & VINEY, Ld., 1, Creed Lane, Ludgate Hill, E.C

PLATINOTYPE.

SIMPLEST, MOST ARTISTIC, AND PERMANENT PHOTOGRAPHIC PROCESS.

New and Improved Paper.

NO HEATING OF DEVELOPER REQUIRED.

NO EXTRA COST.

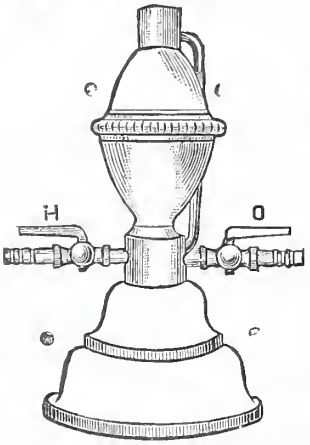
MADE IN THREE QUALITIES { AA—Smooth Paper of Medium Thickness.
BB—Ditto ditto Thick, very strong.
CC—Rough Surface Paper, strong.

PRICE, 48/- PER QUIRE, 26 x 20 inches.

COMPLETE PRICE LIST ON APPLICATION.

These Papers will be supplied in **Sealed Tin Tubes**, either in whole sheets (measuring 26 in. x 20 in.), or cut to photographic sizes.

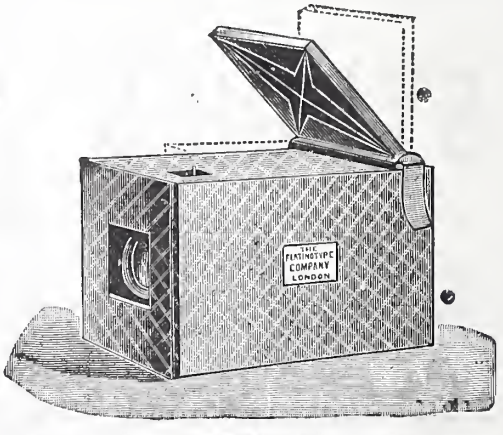
PLATINOTYPE PRINTING LAMP.



Platinotype Prints Printed by this Lamp in a few seconds.
Price £2 2s.

Used by the best scientific and Artistic Photographers, including

CAPTAIN ABNEY,
G. DAVISON,
F. HOLLYER,
R. KEENE,
Etc., etc.



IMPROVED KEY CAMERA.

Simplest and Best Hand Camera made. Measures only 8 x 4¾ x 4 ins.

PRICE, Quarter-plate, £7 7s., with 6 Double key Slides.
Ditto ditto 2nd Quality, £5, with 3 ditto ditto.

MAY BE SEEN AT THE OFFICE OF

The Platinotype Co.,

29, SOUTHAMPTON ROW. HOLBORN, LONDON, W.C.

salient features in possible landscapes, and show in what way they are desirable in pictorial effect. Very much has necessarily been omitted, and, on the other hand, it may be said that too great an emphasis has been laid on a feature or features which, while desirable enough in some instances, yet our remarks appear to insist that such a feature is an essential to every picture. We are aware that such an impression may have been sometimes conveyed, yet we have lost no opportunity of asserting that there can be no rule laid down, and what holds good in one composition may be wholly inapplicable in another, and so we think there will be no harm if we have been over-persistent in some matters, because it will have been more lastingly impressed on the student's memory, and a principle is best well learned before the learner's individuality may assert itself in contravening the maxims received and carving an original path for himself.

Most of our remarks have applied to landscape in more or less flat country, because we felt the impossibility in these few chapters of touching upon the many varied phases of field photography in the hill country or mountainous regions, and notwithstanding the apparently increasing popular appreciation of the subtle beauty of the marsh and fen, still it is possible that we have failed to awaken the sympathy of some who are most at home amidst the great hills, the noisy torrent, and the scarred and rugged mountain slope. May such an one bear with us and be assured that at other times we have made our temporary home and resting place amongst the wild mountains, and will never forget their lessons and their grandeur. Still, the fen country has a beauty too, all its own, and is not too humble or too simple or devoid of great teaching for our mountain lover if he will turn and have patience.

"The Study and Practice of Art!" In very truth, Art in any connection is not to be attained without long and sincere "study." If we would be successful in photography as an Art, beyond the mere capability of making photographic prints of certain definite objects, it is useless to suppose that it can be done by taking up the pursuit for an hour or two now, and a day or so next week, filling the interval with other interests and occupations. Only by persistent study, constant observation, hard work, and frequent practice shall we attain to anything above the merest mediocre results. Do this faithfully, striving to record the beauties of nature as you see them *yourself*, being true to yourself, never fearing but that your individuality will of itself be revealed, and your truthfulness and conscientious strivings will meet with recognition and reward, far greater and more lasting than if you work only to please public taste, or for the end that you may quickly win medal awards. The artistic faculty is not equally in all, but it may lie undeveloped in many unsuspected. Such faculty develops by cultivation, and there is probably enough of it in everyone to be worth cultivating and improving; and by increased culture we shall gradually lose our likings for much that we previously admired, and take greater pleasure in the refined, the harmonious, and the hidden beauties; and many things that our teachers called beautiful and good, but which to us were inexplicable, will then be understood and appreciated.

All this by way of pacification of the self confident and impatient. Study nature for artistic ends, and practice your art in and amidst the objects of nature: out in the broad fields, under the light of day, you will find channels for thought, materials for work, and ways of pleasantness of which you had not guessed.

Rochester Naturalists' Club.—Meeting on 20th inst., Mr. C. Bird in the chair. Mr. J. C. Boon gave a very instructive demonstration on the "Wet-plate Process," and explained the whole process in a manner that was most interesting to those present, and answered the questions put to him very fully. Mr. G. E. Randall offered to give a silver medal for the best print to be taken by the members in the neighbourhood of Rochester.

Construction of Twin-Lens Hand-Camera.—II.

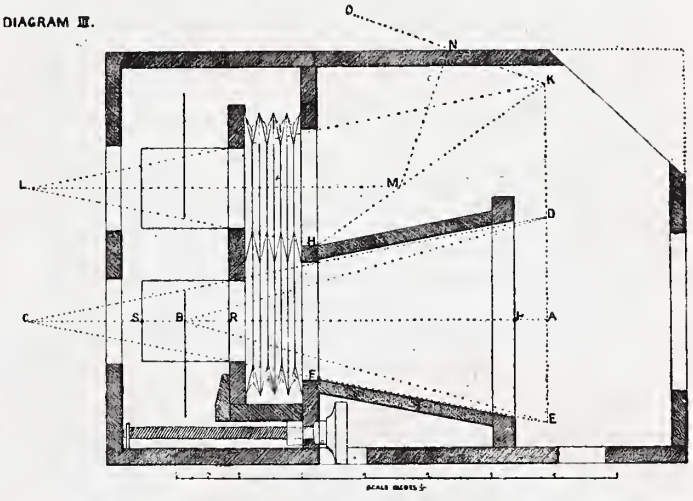
By Enn Ess.

The method of adjustment of the mirror chamber having been discussed, the construction of a twin-lens hand-camera embodying the principles enumerated may now be considered, the following data being given to work on, viz.:

Quarter-plate size.
Lenses, R. R, of $5\frac{3}{4}$ in. equivalent focal length.
Extension of $2\frac{1}{2}$ in. to be arranged for.
A changing box, to contain a dozen plates in metal sheaths, to be used in lieu of dark slides, the exterior dimensions of the box being:
Width (back to front) $2\frac{3}{8}$ in.
Length (side to side) $4\frac{3}{4}$ „
Depth (top to bottom) $4\frac{1}{4}$ „
The mirror to be placed at an angle of 35 deg.
No button, millhead, or other such item to protrude beyond the outer surface of the camera.
Camera case to be made of wood, full $\frac{1}{4}$ in. thick.

The first step towards carrying out the intention is to plan a box, or case, of the dimensions necessary to contain in the most compact form, both as regards bulk and means of manipulation, the whole of the working parts of the camera.

DIAGRAM III.



To this end a working drawing must be prepared, and to start with, the equivalent focal length of the lens, or, putting it in another way, the distance from the diaphragm of the lens to the face of the plate in register for exposure—viz., $5\frac{3}{4}$ in.—is taken in hand. A horizontal line A B is laid off, measuring $5\frac{3}{4}$ in. (fig. 3), and this may be termed the base line of operations.

Through the point A a line is drawn at right angles to A B, and on it are marked the points D E equidistant from A and $3\frac{1}{4}$ in. apart, being the width of a quarter-plate.

From the point B the line A B is lengthened $2\frac{1}{2}$ in. to C, representing the extension required.

The point B therefore represents the position of the lens diaphragm when at its equivalent focal length from the plate D E, and C that when the lens has been extended $2\frac{1}{2}$ in. beyond it.

The point C is now connected with D and E, the connecting lines representing the extreme upper and lower rays of light passing through the lens that will touch the plate in the picture chamber when the lens is fully extended, and consequently the interior structure of the camera must be such as to offer no impediment in any form to their passage.

If from the point D a line at an angle of 35 deg. to A B be laid out, it will be found to cut the line C E in F, and would represent the mirror, were such wanted here, as has been shown in figs. 1 and 2.

Through this point F, a line at right angles to A B is drawn, on which, $\frac{1}{4}$ in. above its intersection with C D, the point H is marked, from which point and at an angle of 35 deg., a line drawn cutting E D, extended, in K, represents the position of the mirror required.

The point of intersection of a line drawn from H, parallel to E C, and from K, parallel to D C, viz., L, represents the diaphragm of the upper or mirror lens when fully extended, and these lines represent the extreme upper and lower rays of light that will touch the mirror, which, as in the case of the picture chamber, must not be interfered with by any interior structural portion of the camera.

The line L M, parallel to C A, represents the central ray of light striking mirror at M, and reflected in the direction M N to the ground-glass screen K O; the method of obtaining the position of which has been set out in figs. 1 and 2.

The distance C L being that from centre to centre of the two lenses, when attached to the lens board.

Thus far then the exact positions to be occupied in the camera by the lenses, mirror, focussing screen, and plate when in register for exposure, have been fixed in skeleton form.

From this point the structure of the camera becomes more observable.

On examination made of the changing box to be arranged for, it is found that the plate, when in register for exposure, lies back within the box to the depth of half an inch from its front face. The line D E, in fig. 3, representing position of plate, will therefore lie half an inch inside the changing box, consequently the outer face of the back frame of the picture chamber, with which the front of the changing box will be in close contact, must be fixed at that space *nearer* to the lens.

Measuring this distance from A, on line A B, in P, a line is drawn through this point at right angles to A B, 4 in. in length, *i.e.*, 2 in. above and 2 in. below P. A second line parallel to and $\frac{3}{8}$ inch inwards from it, and of the same length, being drawn, the position and thickness of the back frame of the picture chamber become fixed. The floor of the camera has now also become fixed, as the bottom of the frame above mentioned rests upon it.

The width of the changing box from back to front is $2\frac{3}{8}$ in., $\frac{1}{8}$ in. must be added for pressure springs, necessitating $2\frac{1}{2}$ in. distance required from outer face of picture chamber frame to inner side of back end of camera. Measuring this distance from P, in continuation of P A, a line perpendicular to A B is drawn, meeting the floor of the camera already fixed, and the well or chamber into which the changing box slides is obtained.

The line passing through the points F H assigns the position to the back face of a $\frac{1}{4}$ in. thick central frame, fitting the interior of the camera, to the front face of which the bellows are affixed.

From the point H, a line drawn parallel to C D, meeting the inner face of the back frame of the picture chamber, and a second $\frac{3}{16}$ in. below and parallel to the first, represent the division between the picture and mirror chambers.

Similarly a line from a shade below the point F, parallel to C E, and a second parallel to and $\frac{3}{16}$ in. below it, indicate the bottom of the picture chamber.

The exterior measurement of the lens tube, plus the thickness of the flange, is $1\frac{3}{8}$ in., the diaphragm being centrally placed. From the point B, indicating the position of the diaphragm of the lens, on line B A, $\frac{11}{16}$ in. are marked off in point R; this fixes position of front face of $\frac{1}{4}$ in. thick lens board, the length of which is $4\frac{3}{4}$ in.; the centres of the holes which take the lenses being $1\frac{5}{16}$ in. respectively from upper to lower ends. The space between lens board and central frame thus available for bellows measures $\frac{13}{16}$ in.

From point B, $\frac{11}{16}$ in. is laid off on line B C in S, which fixes position of front end of lens tube, $\frac{5}{16}$ in. beyond which is the inner side of the front end of the camera.

The inner side of the top of the camera is placed $\frac{1}{4}$ in. above the point K.

Between the bottom of the picture chamber, and the floor of the camera a small cell remains unappropriated; within this the millhead of the screw, which extends the bellows, lies concealed, its rim being flush with the bottom of the camera in an orifice left, through which it may be reached by a finger. The screw passes through the bottom of the central frame, and works a cradle to which the lens board is affixed.

For the purpose of raising the changing box out of its well sufficiently to allow of it being handled from the top, a circular hole is pierced through the bottom of the camera, large enough to admit of the forefinger being pushed up through it.

The outcome of construction so far is that a camera case, measuring inside—

Length		$8\frac{3}{4}$ in.
Depth		6 ,,

is found sufficiently capacious to contain all the working parts of the apparatus. The breadth must be the side to side measurement of the changing box, viz., $4\frac{3}{4}$ inches, plus sliding room $\frac{1}{16}$ inch, in all $4\frac{13}{16}$ inches. As $\frac{1}{4}$ inch wood is to be the thickness of the case, the outside measurements will be—

Length		$9\frac{1}{4}$ in.
Depth		$6\frac{1}{2}$,,
Width		$5\frac{6}{16}$,,

In consequence of the depth of the changing box being less than the height of the point K above the floor of the camera, the upper top corners of the camera case may be taken off at an angle of 45 deg. from 2 inches below the corner point. By so doing the manipulation of the changing box is greatly aided.

In examining the camera case, as delineated in fig. 2, the fact of the skeleton line K O, representing the position of the ground-glass screen, extending beyond the case is matter of no moment, the skeleton lines merely exemplifying the reasons for the several constructive lines.

When the camera is closed, the ground-glass screen falls within. This will be fully described when the details and measurements of the several working parts of the internal structure are discussed.

Multiple Coated or Multiple Film Plates.*

BY GREGOR GRANT.

IN speaking of multiple film plates it is at present impossible to do so in general, for one is compelled to discuss the merits and demerits of the only plate of the kind at present obtainable rather than to theorise upon the principles of multiple-coated plates generally.

For the purposes of this paper, and in order to obtain a basis upon which to work, it will be well to start with the two advantages claimed by the makers of the Sandell plates for their production, viz.:

(1) Absence of halation.

(2) Impossibility of being over exposed.

Taking these two qualities as being those—or two of those—of an ideal plate, it will be well, before passing on to determine how the Sandell plates fulfil these conditions, to first consider what attempts have been made to produce a plate that will be entirely free from that bugbear of photography halation, and in order to understand these attempts the better, it must be first determined what the cause and effects of halation are. To deal with the latter first—because most easily disposed of—we are all of us but too painfully aware of the visible results of halation. In landscape work, the blurring of the outline of foliage against a bright sky; in interior work, the halo which makes its appearance round a brightly lighted window, often not only obliterating the shafts and bars of the casement, but leaving only an irregular white blotch in that part of our picture where the window should appear.

As to the cause of halation, the first person to lay down any law on this subject was Captain Abney, and the theory first advanced by him has stood the test of time, and come to be univerally accepted as the primary cause of what is known as halation. The theory is briefly this—that the rays of light from the brightly lit portion of the picture penetrate the film which supports the sensitive salt, and passing through the glass plate are reflected from its hinder surface back on to the film, and a moment's thought will show that the thicker the sheet of glass the greater will be the aberration of the reflected image from the original, and consequently the greater its interference with it. Though many attempts have been made to overcome or to minimise this reflection, such as grinding one or both surfaces of the glass plate, or backing the plate with either a dead surface or one with the same refractive index as the glass, and of non-actinic colour, only the latter can be said to have been adopted, and neither to be satisfactory, for, although the dead surface will absorb all the light rays which reach it, it obviously cannot affect those which are reflected from the back surface of the glass, and the only advantage that backing has over placing a sheet of black paper behind the plate is that by it optical contact is obtained.

Some ten years ago, Mr. W. K. Burton made and gave to the photographic world the results of some experiments in which he placed below the sensitive film a non-actinic one of gelatine, containing chromate of silver, which could be fixed out with hypo, leaving a clear printing negative. This was found to be fairly efficient, but so awkward to work as to be impracticable for general use.

* A communication to the West Kent Amateur Photographic Society.

I believe that the experiment has been tried of coating a plate with a very rapid but poor emulsion, exposing in the usual way, and then coating the plate with a thick emulsion, which it was supposed would be affected symmetrically by the exposed portions of the under film, and yield on development a good image. Who made the experiment, and what the result was, I do not know and cannot say, but venture to think that the process would prove considerably more awkward to work than that of Mr. Burton.

It having been found that very little light penetrated an ordinary coated gelatine film during a moderate exposure, it was thought that if the film were thickened the chances of halation would be very materially reduced. This theory proved substantially correct, but the thick film presented difficulties and disadvantages. There was the expense of making so thick a film rich, and if it was poor—*i.e.*, if the same amount of silver that would be contained by an ordinary film were spread over the greater thickness—then an insufficient number of particles of the sensitive salt (that is, only those near the surface) would be affected to give a good result. This difficulty, however, has been got over by Mr. Sandell, who hit on the plan of coating the plate twice—a process heretofore considered impossible—first with a slow emulsion and then with a rapid one, his contention being that while the shadows were properly exposed on the upper film the high lights would solarise it, and, penetrating to the lower, correctly expose that, and if the exposure were then increased, the high lights would entirely reverse the top film, converting it into a positive, and the greater the over-exposure the denser the positive would become, counteracting in its effects the fuller exposure of the under film; meanwhile if the shadows were not very dark they would, as they lessened the pluck of the "embroyo" image of the upper film, form an under-exposed, and therefore plucky, one on the lower, and the weaker the one became the stronger would become the other, and the two together form a good negative.

Thus, on a correctly exposed plate with heavy contrasts in it (and it is for this kind of view that the Sandell plate is meant), there would be on the upper film shadows with the correct exposure and high lights solarised, and on the film beneath clear unaffected film below the correctly exposed shadows, and correctly exposed film below the solarised high lights; and, in the case of the "pseudo" over-exposed plate, the shadows would be rendered by a negative lacking in contrast above, and one with violent contrasts beneath, and the high lights by a positive above and a dense negative beneath; the combination of the two images, in each case, giving as a result a properly balanced negative of more or less density according to the amount of exposure the plate has received. In all cases, little or no light would go beyond the second layer of gelatine, and, therefore, none could be reflected from the back of the glass and cause halation.

This, then, being the theory of the Sandell plates—the only multiple film plates at present in the market—it now remains to be seen what they will do in practice, and I must be egotistical enough to commence with a description of my own experiments, but only because I am the best acquainted with *them*. They may be interesting to some here, because made by one who knew nothing and consequently commited every possible error of exposure, *i.e.*, of giving too little, too much, and what proved more fatal than either—singularly though it may sound—a mean between the two.

On starting for my holiday this summer I determined to take a dozen ordinary Sandells with me, just to see what I could do with them. As I only got the plates the very day I started north, I was unable to make a single test exposure before starting, so had only the verbal advice of our accomplished president, Mr. Pringle, to go upon, and this I completely misunderstood, with the result that I went away under the belief that the correct way to treat a plate was to grossly—*i.e.*, many times—over-expose it, so as to reverse the top film, which was afterwords to be got rid of by stripping. As a result of the misunderstanding I managed to secure nine good negatives out of my dozen plates, and might have had ten but for losing one through stripping when I ought to have reduced. This, it must be admitted, speaks very well for the plates. As a basis for my exposure I took what I considered a full exposure for a Thomas thickly-coated landscape plate and multiplied that by ten to make sure of over-exposing.

The first view I took was from a hill path looking back over the town below towards the mist-covered hills beyond; a bright morning sun shining over my shoulder was clearing the mist from the mountain peaks of the Trossachs, and the whole landscape was yet hazy. I considered that a T.C.L. would have stood half a second at *f*/16, so I gave five seconds. On development the upper film darkened all over at once, and development was continued for about three-quarters of an hour, when the image was distinctly and evenly visible on the back of the plate. I fixed, and then stripped the top film off and found a fully exposed negative on the lower. The second plate, which was an identically similar, though not the same view, but with only 7½ sec. at *f*/22, I treated likewise, but found the image on the lower film too under-exposed to be any good, but the plate would probably have been saved had I reduced instead of stripping. As there were no great contrasts in either of these views, they were merely a test for length of exposure, and as such I will refer to them later on. As another test for length of exposure, I exposed two plates, a Cyclist and a Sandell, on the same subject—a group of old tombstones lying flat—under precisely the same conditions, giving the latter as many minutes as the former seconds—in each case one half, or a comparative ratio of 60 to 1. Between the two results you will see there is little to choose; the Sandell is the denser of the two, has more detail in the shadows, but is somewhat stained with the reducer. Three other views had dark foregrounds, a mountain distance, and clouds; in one the sun was in front of the camera, and shining between fir trees on either side of the picture, throwing their tranks into deep shadow; between them was a distant mountain peak, Ben Vhorlich, some eight miles off, and brightly lit clouds—in each case the clouds print well, and in this one the detail in the trunks of the fir trees is not lost. This, I think, shows the plates' capacity for rendering contrasts.

Two other views of the same kind I unfortunately lost through giving an exposure too much for the upper film, yet insufficient to penetrate it—which seems the only thing fatal to a Sandell. Yet I believe that had development been either proceeded with more cautiously or carried further, say, after stripping off the upper film, that a printable negative might have been obtained.

Still two others, which I exposed in a deep glen—one in which I believe a camern had never been before—with exposures that I considered sufficient to penetrate to the lower film, gave fully exposed but good images on the upper, which did not require reduction. All the plates were developed with Thomas's new developer, "Cyclol," which I am told is a mixture of hydrokinone and eikonogen, and, with the exception of the two I lost and the two mentioned as taken in the glen, development was pushed till the image appeared well marked on the back, and reduced to the required density with ferricyanide of potassium and hypo.

I will now pass on to experiments not made by myself, but the results of which I have seen, and with this *modus operandi* of which I am quite familiar. The subject of one, which was conducted in the presence of Mr. Sandell himself, was a drawing room, facing south—a large window with lace curtains in the centre of the picture, and beyond it a glass passage and beyond that again the garden landscape, lawn and trees. It was found that the correct exposure for a Paget plate was two minutes—the Sandell was given 20 minutes—the room was darkly lit, the sun shining brightly outside. In result the Sandell showed a decided superiority over the other, there being complete detail in the interior, no trace of halation round the window, and the landscape without still clear and printable.

Another trial had for its subject one which might be said to have been made to give halation all over—the interior of a vinery with a blazing sun shining in patches through the openings between the leaves on to bunches of green grapes. Several exposures were made, varying from 2 sec. to 4½ min. Most of the resulting negatives were good, and none showed any trace of halation whatever.

From the foregoing experiments I think it may be held that with proper treatment the Sandell plates *do* meet the claims made for them by their manufacturers, viz., freedom from halation and capacity to stand an abnormal and almost indefinite amount of over-exposure.

Doubtless the question will be raised, "Does the Sandell plate possess any advantages under ordinary circumstances?" The answer is a simple one—most emphatically, No! But when you come to interior work, or views with great contrast in them, or where the required exposure is unknown, and cannot be guessed at with any degree of certainty, then as emphatically, Yes! for all that is necessary to ensure a good negative, is to be quite certain that a sufficient exposure is given. How much too much does not appear to matter in the slightest, for, provided the upper film has received sufficient light to correctly render the shadows, the quality of the resulting negative lies in the hands of the operator.

The Sandell plates are made in two qualities—the "General" with two films, and the "Especial" with three, the rapidity of the top film in each case being the same, and the required treatment exactly similar. The rapidity, however, has been very much over-stated—one authority contending that half-a-second at *f*/64 under trees was sufficient. I am inclined to place it somewhere between that of an Ilford ordinary and a Thomas's E.R., or about Warnerke 20.

As to treatment, I cannot say more than to summarise my previous remarks in various parts of this paper.

The old wet collodion rule of "expose for the shadows, and let the high lights take care of themselves," seems to apply well—give the exposure that you think would best render the shadows on a plate of moderate rapidity, the high lights will then accommodate themselves somewhere in the "substrata," the great point to bear in mind being that if more exposure be given than the shadows will stand on the top film, then a *great deal* more must be given, or the plate will

be lost, by which is meant that if x represent the correct exposure then $2x$ or $3x$ will mean a flat and, what would ordinarily be termed, a hopelessly over-exposed plate, but if $50x$ to $100x$ be given, then there is every chance of securing a good image if development only be carried far enough.

As for the developer, hydroquinone, or eikonogen, or a mixture of the two, such as "Cyclol," or "Hintokinone," seems the best; "Cyclol" being recommended by the manufacturers and giving excellent results. Ammonia should be avoided—for as development is necessarily long—at any rate in comparison to the exposure—for part of the plate at least—it causes a fogging of the more sensitive film quite different to the increased density caused by other developers, consequent on excess of light action. Another great point to bear in mind is that the greater the exposure that has been given, the further must development be carried, not by strengthening the developer, but by patience, for it takes a long time for the developer to soak through to, and act upon, the lower film.

The question will doubtless be asked, How is it possible to tell which films have been affected by the exposure, and by what symptoms can development be regulated? This is not so difficult a matter as would at first appear. As with all other plates, it is best to commence cautiously, and with a developing solution of moderate strength; if the shadows remain fairly clear it is safe to conclude that the plate has not been over-exposed, and development should be carried on the same as with an ordinary plate, judging of the density of the appearance of the surface of the film, and by transmitted light, for nothing will show on the back of the plate except, perhaps, some very brightly lit portion—which should do so. If, however, the top film completely fogs over, the plate has been over-exposed, and development must then be continued for about half an hour, or until the image shows plainly on the back of the plate; by transmitted light it will then appear perfectly opaque.

The plate is then, in either case, fixed in the usual manner, care being taken that it is thoroughly fixed. The correctly-exposed plate now represents the appearance of an ordinary negative, but the other is still opaque, and must be reduced, or if before fixing the image appeared evenly all over the back of the plate, the upper film may be stripped off—that is, if the operator feel competent to do so successfully—for it will have received such an excess of exposure as to yield a complete negative on the lower film, and render the top one superfluous. But stripping is risky work, and its only advantage is that it obviates the danger of reduction stains.

A prominent theorist, Mr. Lyonel Clark, has suggested that a possible failing in the plate's action would be a break in the scale of densities, by which is meant that the upper film might be of the rapidity to correctly render the shadows and the lower the high lights, but the half-tones would act on both films and produce an area of undue density; this, however, is only a theoretical failing, for, as a matter of fact, half-tones are rendered with great beauty. Mr. Lyonel Clark further suggested that, to overcome this failing, a plate might be coated with a succession of films, each more rapid than the one below it, but this would on the face of it be useless, for no light would reach the lower films at all.

At a recent meeting of the Camera Club, Captain Abney described a modification of the Sandell plate to be used for spectrum photography, in which the upper film is isochromatic: the action, however, remaining to all intents and purposes unaltered.

The blue or chemical rays solarise the upper film, and are rendered by the lower, while the red rays act on the isochromatic film only, leaving the other untouched.

The scale rendering of plates thus quoted is said by Captain Abney to be exceedingly good, and if by multiple coating a plate can be produced that will render by one exposure all the different colour grades of the solar spectrum in their due gradation of tone, and not only those which are visible, but also the ultra-violet and ultra-red rays which are quite invisible to the eye, it must be admitted that the multiple film plate is a step in the right direction, and that by its invention Mr. Sandell has added one more stepping stone to those by which we photographers hope to cross the flood of difficulties that flows between us and the certain production of an ideal negative.

R. N. E. College, Devonport.—An exhibition of lantern slides took place on 16th inst. The slides consisted of a set lent by Mr. Tylar, of Birmingham, which were taken by himself on a visit to the Channel Islands. They are known as the "Tit-Bit" slides, and, although a comparatively small collection, they are well worth exhibiting, and are sure to be appreciated both by photographers and their uninitiated friends. After these slides had been shown, some of the more recent work of some members of the Club was shown.

The Printing of Clouds.

By W. H. Bibby.

FOR a long time after commencing to practise photography I looked upon the combination of suitable clouds with landscapes, seascapes, etc., as something beyond my reach. All the time I felt that a picture with a white sky was short of something; I thought that the sky wanted life—the life and motion we are accustomed to behold whenever we take our walks abroad. When I began to send in prints to your competitions, it was for educational purposes, and I soon found out, after perusing your short criticisms of the prints, that blank skies would not find much favour in the eyes of the judges. I therefore resolved to attack the apparently insurmountable mountain of difficulty, cloud printing. My early experiences in this branch of our beloved art—I make bold to call it art—would be amusing reading. I almost despaired of success. The articles by Mr. Hodges in recent issues reminded me of those troubles, because I tried the methods he advocates without any result beyond vexation of spirit. By painting on the backs of negatives I could never obtain a satisfactory junction of sky with horizon. I am sure Mr. Hodges and others can work this way with good results, but I fear the plan is difficult for very many workers like myself, who have had no training with the pencil and brush. I think all the plans suggested by Mr. Hodges are very difficult and troublesome to young workers. Not that I think anyone should shirk trouble; indeed, I am of Mr. Hodges' opinion, that the photographer who is afraid of taking pains will never produce anything worth looking at. I have great respect for Mr. Hodges' opinions and advice, and I have profited much by the attentive reading of his various articles. I feel it is something like presumption on my part to set up my opinion against his, but I have found the plan I finally hit upon, after many struggles, to work so well that I thought I would describe it for the benefit of anyone who experienced difficulty in the matter. I would not venture to recommend the plan I follow were it not so easy and simple, the only qualification required being a capacity for taking pains. It leaves the negative untouched, which, I think, is a great advantage, for I look upon the application of the pencil or brush to a negative as something akin to sacrilege. I proceed as follows:—I first obtain a piece of clean tissue paper, free from creases, and the same size as the negative. I place this in contact with the negative, and holding them up to the light I carefully draw a line along the edge of every object that belongs to the earth, whether it be hill, tree, or building. This done I next divide the paper along the line I have drawn, employing a sharp pair of scissors. I next prepare a sheet of thin cardboard the exact size of the top of the printing frame from edge to edge. In the exact centre of this I draw an outline the size of the negative. I now take one half of the divided tissue paper (either will do), and placing it at the top of the outline prepared for it on the card, I trace the uneven edge, and then neatly with the point of a sharp penknife divide the card along the tracing, separating the card by a straight cut at each side. I have now two pieces of card, one to block out the sky and the other to cover the land portion of the negative. Taking a printing frame, I put in the negative, and holding them up to the light I proceed to carefully adjust the card to block out the land portion. Being satisfied that each outline on the card corresponds with the outlines on the negative, I fix the former to the frame with ordinary tacks. Taking a second frame, and putting the negative in, I affix to it the card to block out the sky portion. I have now two frames prepared, one to print the landscape and the other to print the clouds or sky. Now I find it best to print the clouds first, because I think it is an improvement if the sky portion is faintly printed a little below the edge of the vignette, for then such things as tree tops, ships' masts, and chimneys, etc., will be printed on the top of the faint impression of the clouds. I, therefore, take the frame with the card to block out the land, and insert the selected cloud negative. The paper to be printed on should be the exact size of the negative, for it is important that both negatives are always placed in the frame at the corner which corresponds with the vignetting cards, and if the paper is the exact size it is impossible to make a mistake. Before putting out to print I always cover the top of the frame with a sheet of tissue paper, because I am saved the trouble of turning the frame round, and the resulting print is, I think, always better. The clouds being sufficiently printed, it only remains to transfer the print to the other frame with the cloud portion blocked out, and proceeding to print as with the clouds. This system applies to printing-out paper of any sort, and to paper that needs developing, as bromide paper, etc., but, of course, it is easier to manage a printing-out paper, as special calculations have to be made for exposing bromides. Other little details must be left to the common-sense of the worker. Since adopting this plan my prints have come out much higher in the competitions than they did before.

ALBION ALBUMENIZING COMPANY.

REDUCTION IN PRICE OF

CELEBRATED SENSITIZED PAPER, Ready Cut and in Sheets.

CAMERAS. LENSES.

C.-D.-V.'s.
8½ by 2½—43 out of sheet.
Quire Box contains 1008.....14/-
¼ " " 504..... 7/6
⅛ " " 252..... 4/-

CABINET SIZE.
5½ by 4—15 out of sheet.
Quire Box contains 360 14/-
¼ " " 180 7/6
⅛ " " 90 4/-

Whole Plate—6 in sheet } Quire.....14/-
Half Plate—10 in sheet } ¼ " 7/6
Quarter Plate—25 in sheet } ⅛ " 4/-

PLATES. SUNDRIES.

Send Twelve Stamps for Sample Sheet of any of the above.

FULL SHEETS—Quire, 13/6; Half Quire, 7/-; Quarter Quire, 3/3; Sheet, 1/-. All best Double Albumenized Paper.
CATALOGUE POST FREE. ABOVE PRICE ONLY FOR CASH WITH ORDERS—POST FREE.
96, BATH STREET, GLASGOW.

Now Ready. Crown 8vo, cloth, 140 pp., price 2s., post free.

THE LANTERN-SLIDE MANUAL

By JOHN A. HODGES.

CONTENTS.

Introduction.—SECTION I. SLIDE-MAKING BY REDUCTION: The Apparatus. Reducing by Artificial Light. Cleaning and Preparing Glass. The Negative.—SECTION II. THE REDUCTION PROCESS: The Wet-Collodion Process. The Gelatino-Bromide Process.—SECTION III. LANTERN SLIDES BY CONTACT-PRINTING: Working by Artificial Light. The Gelatino-Chloride Process.—SECTION IV. GELATINE EMULSIONS SUITABLE FOR TRANSPARENCY PLATES—HOW TO MAKE: Gelatine Process. The Collodio-Bromide Process. The Albumen Process. The Carbon Process.—SECTION V. THE FINAL TREATMENT OF THE SLIDE: Colour, Toning, and Intensification. Printing in Clouds. Mounting, Binding and Finishing Slides. Celluloid Lantern Slides.

London: HAZELL, WATSON, & VINEY, Ld., 1, Creed Lane, Ludgate Hill, E.C.

Owing to increased business, we have been obliged to take

LARGER PREMISES.

PLEASE NOTE THE NEW ADDRESS—

THOMAS ILLINGWORTH & CO.,
Photographic Works, Willesden Junction, N.W.

TRY OUR ENLARGEMENTS.

THE PHOTOGRAPHIC "TABLOIDS"

(B., W. & CO.)

PORTABLE, ACCURATE, ENERGETIC, & LASTING.

These "Tabloids" are most convenient for preparing Solutions. Prices: Pyro Developer, bottles of 25 and 70, at 6d. & 1s. each. Quinol-developer, in bottles of 25 and 70, at 6d. & 1s. each. Pyro Accelerator, bottles of 30 and 100, at 4d. & 9d. each.

BURROUGHS, WELLCOME & CO., Manufacturing Chemists, Snow Hill Buildings, London, E.C.

W. WRAY, LENSES.

MANUFACTURER OF PHOTOGRAPHIC

PRICE LIST FREE.

Illustrated Catalogue of Telescopes, Microscopes, etc., for stamp.

NORTH HILL, HIGHGATE, LONDON, N.

H. HUGHES & SON,

The New London Photographic Stores,

THE AMATEUR'S COMPLETE SETS.
¼-Plate, 35s. ; ½-Plate, 70s. ; 1/1 Plate, 100s.

NEW INSTANTANEOUS SET.
¼-Plate, 60s ; ½ Plate, 120s. ; 1/1 Plate, 180s.

OUR COLONIAL OUTFIT.
Best Apparatus, packed complete for shipment:
¼-Plate, £ 8 ; 1/1 Plate, £15.
All Apparatus, Chemicals, etc., guaranteed.
Dark Room for use of Customers.

DETECTIVE CAMERAS, 1891.
The Presto Camera, 10/6 ; The Guinea Hand Camera, 21/- ; The Hand-Camera, 23/- ; also the Kodak. The Facile, the Radial, and other new and approved patterns.
NEW ILLUSTRATED CATALOGUES POST FREE.

59, Fenchurch St., London, E.C.

"CRESCO FYLMA"

Is a Perfect and Reliable Stripper for Carbon and Process Work, also a New Process for making Enlargements without Dark Room or Lens.

See report of Demonstration before the Guildford Club, Dec. 15, and send for Pamphlet, and also see *British Journal*, pages 776 and 779.

Price 2/9, post free 3/1½,

Sufficient to strip and enlarge from 2 to 4 doz. plates.

"The process is extremely simple, and the results are very fine. . . . To Carbon workers this process forms an easy and ready method of obtaining enlarged and reversed negatives."—*Amateur Photographer*, Dec. 25, 1891.

HILL BROS., VICTORIA ROAD, SURBITON.

WHEELER'S PHOTO HELPS.

PHOTOGRAPHIC ENLARGEMENTS: How to make them. 130 pages, paper 1s. Cloth 1s. 6d
INTERCHANGEABLE ALBUMS. 5 sizes.
ANTI-HALATION PAPER. In boxes, ½-pl. & upa.
PHOTOGRAPHIC BLOTTING BOOKS. 5 sizes.
EXPOSURE REGISTER AND TABLES, 1s. & 1s. 6d.
GELATINO-CHLORIDE BACKING PAPER, all sizes
BROMIDE PRINTING REGISTER. Cloth, 1s.
MODERN PHOTOGRAPHIC LABELS. Best out, 6d.
NEGATIVE PRESERVATIVE PAPER. All sizes.
CELLULOID STORAGE CASES. 2 sizes. Cloth.
READY MARKED LANTERN SLIDE MASKS
BINDERS THAT WILL STICK. 1s.
PHOTO-PRINT CASES. Ch. pure. 3 sizes.

THE DEALERS, or GEO. WHEELER & CO., 46, King Street West, Manchester.

JOHN DONE & CO.,

Photographic Printers,

Have the most complete Works for Silver Printing in the Country, and give special attention to Amateurs.

ENLARGEMENTS ON PAPER AND OPAL.

LEWISHAM HOUSE WORKS, WOODVILLE RD., NEW BARNET (nr. LONDON).
Price List's free on application.

THE

"Amateur Photographer"

HAS BY FAR THE

Largest and Most Influential Sale

Of any Photographic Journal, and is therefore the

Cheapest and Best Medium for Advertisements.

GROOVED BOXES FOR STORING LANTERN SLIDES.

MADE OF STOUT CARDBOARD.

To hold 25 Slides, 5s. per doz.; 48s. per gross
„ 50 „ 9s. „ 90s. „
Orders for 1 gross and upward carriage paid.

G. W. WILSON & CO.,
2, ST. SWITHIN STREET, ABERDEEN.

BREAKFAST—SUPPER.

EPPS'S

GRATEFUL—COMFORTING.

COCOA

BOILING WATER OR MILK.

DRY POWDER DEVELOPER (PATENTED)

In weighed powders for 4 quarter, 2 half, or 1 whole plate. Invaluable for Tourists. No trouble, no glass, no deterioration. Perfect for Dry Plates, Bromides, Opals, and Lantern Slides.
In compact boxes, 1/-, by post 1/2 ; & 2/6, by post 2/9. A sample will be sent on receipt of stamped addressed envelope. Retail of all vendors of Photo Goods. Wholesale of Messrs. JOSEPH LEVI & CO., 40, Furnival Street, Holborn, London, E.C., and the Inventor,

W. OLDHAM, ETON, WINDSOR.

FIRST-CLASS PRINTING IN SILVER, PLATINOTYPE, AND BROMIDE,

AT LOW CHARGES.

Amateur Photographers desirous of obtaining the best results from their negatives should send for our price list (sent post free) and specimen print.

Best work only, and moderate charges.

Retouching, Copying, and Developing at Trade Prices.
Photographic Lantern Slides prepared.
Send for Price List.

Address: Photographic Studio, Swanley, Kent.

PHOTOGRAPHIC, SCIENTIFIC, AND MISCELLANEOUS PROPERTY.—Mr. J. C. STEVENS' SALES BY AUCTION of Miscellaneous Property of every description take place nearly every FRIDAY. Lists for Catalogues should be sent at least a week before the sale.—38, King Street, Covent Garden, London, W.C.

THE BOOK OF THE LANTERN.

BY T. C. HEPWORTH, F.C.S.

A Practical Guide to the Working of the Optical (or Magic) Lantern—either as an Educational Instrument, for Exhibition Purposes, or as an Enlarging Apparatus for Photographers. With full and precise Directions for Making and Colouring Lantern Pictures. Price 3s. 6d., post free.

"Here we have something like a lantern manual. A handsomely bound, comprehensive work, written by an acknowledged master in lantern operations."—*Photographic News.*

"Comprehensive, and is characterised by an excellent literary style."—*British Journal of Photography.*

"It is without exception the best book that has been published."—*The Amateur Photographer.*

London: HAZELL, WATSON, & VINEY, LD., 1, Creed Lane, Ludgate Hill, E.C

Reduced Prices

for HIRE of

LANTERN SLIDES.

New Catalogue of nearly 20,000 Slides in Stock, the best Photographs of the most interesting subjects, including British Scenery, Foreign Travels, Popular Science Lectures, Moral Stories, Humorous Tales, Doré Bible, other Religious subjects, and Church History.

These may be had on hire, with Printed Readings, at **2/6** for any one Lecture Series, regardless of the number in the set. Slides not in sets, such as Doré Bible, Hymns, etc., etc., 40 for 2/6, or 9d. per doz. Minimum charge for hire, 1/- CASH at time of hiring ONLY.

Booking.—Orders are booked in advance without extra charge, and should be given as early as possible to prevent disappointment.

Time Allowed.—The prices quoted are per single day's hire, commencing at noon on that day and terminating at noon the day following. If beyond 50 miles the goods will be despatched the previous day, without extra charge, but must be returned by the first train in the morning after being shown, carriage paid. In the event of the hirer desiring to retain the goods beyond the time originally arranged for, he is requested to telegraph immediately for permission.

Telegraphic Address:—

"STEREO, MANCHESTER."

Responsibility.—Goods are lent on hire on the distinct understanding that the hirer is responsible for their safety during the whole time they are away from my establishment.

New Customers are required to deposit the full price of the Goods, viz , 1/- per Slide plain, 2/6 coloured.

CATALOGUE, 2 STAMPS.

W. I. CHADWICK,

2, St. Mary Street,

MANCHESTER.

Winter Photography,

AND

HOW TO PHOTOGRAPH SNOW AND FROST SCENES.

By John A. Hodges.

With the great majority of amateurs outdoor work with the camera during the winter months is scarcely thought of, much less attempted. With the fall of the leaf the camera and its accessory apparatus is usually packed away until the bright green foliage of spring heralds the approach of the more voluptuous beauty and warmth of summer. But why photographers should thus voluntarily impose upon themselves this long period of inaction, the writer is at a loss to conceive, for the opportunities of successful picture-making in the winter are at least equally numerous, and the conditions generally far more favourable than in summer.

Some painters and art critics are accustomed to point to the false tonality—the untrue translation of the varying colours of nature in the monochromatic rendering of a landscape photograph—even though the examples criticised be from the hands of the cleverest and most skilful workers. Nor can the justice of the criticism be denied, for seldom are the varying shades of summer foliage rendered with even a semblance of truth, notwithstanding the advantages afforded by the use of colour-sensitive plates. Delicate tones and still more subtle half tones are too frequently represented by dull heavy masses of shadow; bright sunlit foliage, dancing and feathery, is replaced by that spotty distracting effect painfully familiar in many photographs.

But, in winter, when the trees are bereft of their summer clothing—when bare branches standing out in bold relief against the dull and wintry sky take the place of the waving masses of foliage which prove so alluring to the photographer—*then* the difficulties to which I have referred, in a great measure disappear, and the whole face of nature becomes, as it were, toned down and translated into monochrome. Indeed, with the majority of landscape subjects in winter there will be an almost entire absence of colour, so that in this class of work the photographer may compete with the painter on more equal terms, and with a far greater chance of obtaining, not only a successful, but a truthful result.

"Winter photography!" I fancy I hear some of my readers exclaim, "Oh! no, too dreary and monotonous for me!" Without agreeing that all winter subjects can be correctly so described, we will assume for the moment that under certain conditions a particular scene may be so described. Why not take advantage of the opportunity, reproduce the effect with all its dreariness, and secure perchance a photograph which is a *picture*? Winter photography however, need not confine the student to such subjects, for even during an English winter there are many bright and sunny days, when pictures of a totally different type may be obtained.

But the possibilities of successful landscape photography in winter are perhaps greatest in times of frost and snow, when hill and dale alike are wrapt in nature's icy mantle. The difference which even a slight covering of snow will make on a most ordinary landscape, from a pictorial point of view, is really surprising. A commonplace subject with almost uninteresting surroundings will often be transformed into a delightful study. Nor is it necessary for dwellers in town to go far from the too familiar bricks and mortar, in quest of subjects, for some of the most charming pictures of this kind which I have ever seen were taken in Hyde Park and its vicinity. Neither should a slight fog or haze deter the reader from attempting to expose his plates, for I have frequently found that such apparently adverse conditions help rather than mar the effect, though under such circumstances subjects in which the principal object is in the foreground should be chosen.

A heavy snowfall certainly does seem to tempt even those who belong to the class to which I referred at the commencement of this chapter, to unearth their apparatus and endeavour to obtain some "snow scenes." But, judging from the quality of the prints which are frequently submitted to me for my inspection, and the many letters of inquiry upon the subject which our worthy Editor receives at this period, it would seem that uniformly successful results are by no means invariably obtained. Therefore, it is that I find myself engaged in the pleasant task of jotting down my own experiences in photographing snow scenery for the benefit of those who are not familiar with the work.

In the first place, and apart altogether from the photographic side of the question, a stout pair of strong boots should be regarded as indispensable; as to clothing, it should be warm but not heavy, for the exertion of carrying a heavy apparatus through deep snow is often very great. A thick pair of woollen gloves, a size or two larger than ordinarily used, will be found very useful to persons who, like myself, are not blessed with a quick circulation. My hands have sometimes become so completely numbed by carrying the apparatus, that when I have halted with the intention of taking a view, I have been utterly unable to manipulate the camera. If working in a mountainous or lonely district, a flask of spirits should also be taken. This advice may appear to some people to be almost superfluous, but those who have had experience in this kind of work well know the necessity of paying attention to such details.

I shall never forget an expedition of my own to Burnham Beeches in the winter of 1880, during the great frost of that year. The weather was intensely cold, and a slight snow-fall occurring, I was tempted to take my whole plate camera thither in search of snow pictures. The Beeches were reached shortly after noon, and the two succeeding hours were spent in securing photographs. Just before starting for home a blinding snowstorm set in, accompanied by an intensely cold wind. When the common was reached matters became serious; not a trace of the path was visible, darkness was fast setting in, and the snow was beginning to drift to an extent which made progress extremely slow and difficult. The fatigue was far greater than those who have not been similarly situated would believe, and more than once I was almost tempted to relieve myself of the weight of the apparatus by leaving it behind. This little incident will prove the necessity for having regard to such matters of detail as those to which I have referred.

In photographing snow scenery a good deal of the success or otherwise of the work will depend upon accuracy in exposure, or rather I would say in giving a generous exposure, followed by careful development with a weak developer. A landscape with the ground covered with snow, against which dark tree trunks stand out in strong contrast, is not the easiest of subjects to make a good negative of. The contrasts of light and shade are usually strongly marked, and therein lies the chief difficulty of the work. The exposure must be always sufficiently full to secure detail in the shadows, which will, of course, necessitate the snow portion of the view being considerably over-exposed; a compromise must therefore be effected by skilful and suitable development. Half the failures of beginners are due to under-exposure and the use of a strong developer. The result of such treatment is the production of photographs literally "in black and white." A question was asked the other day as to the kind of lens most suitable for the work. It will be obvious to most people that the construction of the lens will have very little effect upon the result, and therefore it need scarcely be said that any of the lenses ordinarily in use may be employed. Not so, however, in regard to the plate, upon the selection of which I shall have a good deal to say anon.

On Silver Hemisulphate.

By M. Carey Lea.

The existence of those substances which I described some years ago under the name of photosalts of silver,* necessarily implied the existence of the hemihaloids of silver also, as these latter entered into the composition of the photosalts. Similar inferences, though less definite, had long been drawn from the action of light on silver haloids. Two of these, the chloride and bromide, lost by the action of light their complete solubility in ammonia without becoming completely soluble in nitric acid. Evidently there was indicated an intermediate compound between the normal haloids and metallic silver. During the last ten or twelve years I have devoted much time to the attempt to isolate these lower compounds of silver, and to gain some certain knowledge as to the hemioxide, whose existence seemed almost a necessary inference from that of the hemihaloids. Some eight years ago I obtained a substance having all the properties which one would be disposed to ascribe to Ag_2Cl, and a large number of analyses made seemed to confirm the view. I hesitated, however, to publish a description of it, not feeling entirely certain that it might not be a mixture, as to which a concordance of the proportions found of Ag and Cl with theory gives no sufficient information. Since then M. Guntz has described a sub-chloride obtained by acting on silver hemifluoride with phosphorous pentachloride and a hemioxide derived from it. Up to the present time no combination of silver hemioxide with an oxyacid has been known.

Such a combination I have been able to obtain as a double salt of hemisulphate and normal sulphate containing one molecule of each. The new salt has a light-bright-brown colour, and exhibits a stability which, in view of its composition, is something remarkable. It has no tendency either to oxidation or to reduction. Nitric acid, unless very strong, has but little action upon it. Acid of 1·42 poured over it in large excess, and let stand for several days, gradually dissolves it completely, but the same acid diluted with

* "The American Journal of Science, XXXIII., May and June 1887.

two or three times its volume of water has so little action that it forms a convenient means of purification. On the other hand, ferrous sulphate, which instantly reduces argentic sulphate, has no action whatever on the new substance, even with several days' contact. Hot strong sulphuric acid has no action. It might almost be expected that under its influence the argentous salt would gradually take up oxygen and be converted into argentic sulphate. But a specimen which was covered with a large excess of undiluted sulphuric acid in a flask, and was kept under boiling water for ten hours, was not altered thereby. Another strong proof of its stability is found in its resistance to heat.

The application of heat produces a somewhat curious succession of colours. The terra cotta or warm brown shade of the moist substance changes by drying above 100 deg. to pale lilac; at 165 deg.—170 deg. it becomes greyish; at a somewhat higher temperature, yellowish-green. Considerably below red heat it acquires a fine ruby-red colour. In cooling, this red darkens almost to black, then becomes lighter again, and when cold the colour is light olive-green. The changes are repeated as often as the substance is heated and cooled. No sulphuric acid vapours are disengaged even at a low red heat.

It was mentioned in a previous paper that when silver nitrate is reduced by solutions of phosphorus or hypophosphorous acid, or by acidified solutions of their alkaline salts, transient colorations were produced that seemed to suggest the presence of some form of allotropic silver. Since that paper was published this reaction has been taken up for further study. It soon appeared that when the silver salt was treated with a solution of alkaline hypophosphite, acidified with sulphuric acid, the result obtained was entirely different from that which presented itself under any other circumstances. It became clear that sulphuric acid did not act solely by setting free the hypophosphorous acid, but also acted on the silver with formation of a double sulphate.

A remarkable though limited analogy here presents itself between the substance just described and the photosalts of silver. The silver hemihaloids are very unstable substances, but acquire stability by uniting with the normal haloids. In the same way the hemisulphate, which is not known to be capable of separate existence, becomes perfectly stable by union with the normal sulphate. The limitation to this analogy lies in the fact that the last-mentioned combination occurs in definate proportions, which does not seem to be the case with the halogen compounds.

The new substance then is formed by the joint action of sulphuric and hypophosphorous acid on a silver salt. Hypophosphorous acid has but little action on silver sulphate already precipitated, but it is different when the silver sulphate is formed in presence of hypophosphorous acid.

Several silver salts may be used. I have at different times employed the nitrate, phosphate and carbonate. The latter is perhaps the best, because the action with the nitrate is too rapid, and with the phospbate too slow, and for other reasons.

A weighed quantity of silver nitrate is precipitated with an excess of alkaline carbonate and washed. The carbonate, as well as all the other reagents employed, must be absolutely free from chlorides, otherwise the product becomes contaminated with silver chloride which cannot be removed. The silver carbonate is then treated with a solution of alkaline hypophosphite acidified with sulphuric acid. All the alkaline hypophoshite of commerce contains much more than a trace of chloride; this is best got rid of by adding to its solution a little solution of silver nitrate, stirring well at intervals, letting stand for twenty-four hours and filtering. This filtrate with addition of sulphuric acid is to be poured over the moist silver carbonate and constantly stirred. The reaction is complete in twenty or twenty-five minutes, when a bluish-black film of reduced silver begins to form on the surface. Further action is then cut short by neutralizing the liquid with alkaline carbonate. The precipitate is next to be washed several times by decantation. Very pure distilled water is, of course, needed throughout.

Convenient proportions are: 40 grams silver nitrate precipitated with excess of alkaline carbonate. Of sodium hypophosphite, 100 grams, dissolved in 650 c.c. of water, are treated with a little silver nitrate, and after standing and filtering, 4 c.c. of sulphuric acid are to be added and the liquid poured over the silver carbonate. After a few minutes, 6 c.c. more of sulphuric acid, diluted with a little water, are added by degrees. With this second quality of sulphuric acid the characteristic reddish brown colour of the substance first appears.

This process may be varied by precipitating with disodic phosphate (which must be perfectly free from chloride) instead of alkaline carbonate. The action is much slower, about twenty-four hours being needed. Silver nitrate itself may be used, but the action is too rapid and the product is less in quantity.

The crude product obtained in either way is to be purified with nitric acid. Acid of 1·42 is diluted with three times its volume of water, and of this dilute acid a quantity is taken about double in volume to that of the precipitate and of the water left after decanting closely. After a time some effervescence takes place, but the mixture does not become warm. After standing for three or four hours over the precipitate, it is to be poured off and the precipitate washed. This treatment with acid is applied three times: the first removes a good deal of silver, the second a little, the third a trace. Each time the acid is left three or four hours in contact. The product is then washed by pouring on it a large quantity of boiling water. This is repeated four or five times, each time (except the first) placing the vessel in a water bath kept at 100 deg. C. for several hours.

The product is either dried in the air or (for analysis) at 100 deg. C. It forms a bright brown substance, permanent in the air, changing to violet when kept for some time at 160 deg. C. It has the peculiarity that when water is poured on it, it makes a sharp hissing noise. This takes place with the air-dried substance as well as that dried at higher temperatures, and as much with the former as with the latter.

The substance after purification has about one-half the weight of the silver nitrate taken.

These proportions and this mode of operating are those that I have found to give the best result. But the substance is formed under a great variety of conditions. It seems impossible to bring a silver salt in contact with alkaline hypophosphite acidified with sulphuric acid without producing more or less of it. Its presence is often completely obscured by reduced silver. But a mass that looks perfectly black and might be supposed to contain nothing but metallic silver will leave, when treated with nitric acid, a bright brown residue of the double sulphate. We have here, as before, an analogy with the photosalts. For it will often happen that a blackish mass, containing metallic silver and mixed or combined silver chlorides, will, when treated with nitric acid, resolve itself into bright purple or rose-coloured photo-chloride.

All the specimens of this new substance contain a little phosphoric acid which cannot be removed. Reckoned as phosphoric anhydride it amounts to a little over two per cent. Three determinations gave respectively; 2·30; 2·09; 2·18, mean, 2·19.

It is apparently united with silver, and this silver phosphate is united so firmly with the double sulphate that it cannot be detached. If it were not so united it would be dissolved in the nitric acid with which the substance is three times treated if it were normal phosphate, and if it were hemi phosphate it would be converted (if in a free state) to normal phosphate and dissolved.

Another attempt to remove this phosphate was made by heating the substance with sulphuric acid to 100 deg. C. for ten hours, followed by copious treatment with boiling distilled water to wash out the sulphate which it was hoped would be formed at the expense of the phosphate. It seems difficult to believe that a silver phosphate could resist this treatment, but a quantitative determination showed that the proportion of phosphoric anhydride is not even diminished by it.

Other modes of formation than those described here were experimented on with the view of obtaining the substance free from phosphate, but without good result.

It is possible that the silver phosphate may be combined in definite proportions and the approach to uniformity of composition somewhat favours this idea. But such a view would require the assumption of a large, perhaps too large, a molecule.

ANALYSES.

A. Material prepared from silver carbonate and dried at 100 deg. C.

	(1)	(2)	Mean.
Ag	76·13	76·75	76·44
O	3·29		3·29
P_2O_5	2·30	2·09	2·19
SO_3	16·19	16·47	16·33
Water	1·78		1·78
	99·69		100·03

B. Material prepared by various other methods considered less reliable:—

Ag per cent.					DETERMINATIONS. P_2O_5	SO_3	O.
78·59	...	...	...	...			3·93
78·45	...	...	...	...			3·69
77·16	...	...	...	...			3·61
75·43	...	...	...	...	2·18	15·61	3·29
75·46	...	...	...	...			3·25
75·35	...	...	...	...	1·77		
Mean 76·74							Mean 3·55

The determinations of phosphoric and of sulphuric anhydride

are placed opposite the silver determinations to which they belong. The oxygen determinations are distinct.

The most reasonable interpretation of these results is that we have to do with a double sulphate of silver hemioxide and protoxide in which a portion of sulphuric acid is replaced by phosphoric. The proportion of phosphoric acid seems to be nearly constant, three concordant analyses having given 2·09, 2·30, and 2·18, with a mean of 2·19. The proportions may be expressed by the formula—

$$7(Ag_4SO_3Ag_2SO_3H_2O)+Ag_6PO_4Ag_3PO_4.$$

The comparison of this formula, with results obtained, is as follows:—

	Calculated.	Found (Mean).
Ag	76·79	76·44
SO_3	15 67	16 33
P_2O_5	1·98	2 19
O	3·80	3 29
H_2O	1·76	1·78
	100 00	100 03

The large molecule results from the relatively small proportion of P_2O_5, and although the figures obtained for phosphoric anhydride are very concordant, it perhaps is better to consider the substance as a double sulphate in which part of the sulphuric acid is liable to be substituted by phosphoric. If the silver phosphate is taken as adventitious, the formula becomes simply Ag_4SO_4,Ag_2SO_4,H_2O.

Decompositions.—The action of alkaline hydroxides is confirmatory of the above conclusions, and also offers further proof of the great stability of the substance.

When the double salt is placed in contact with excess of dilute sodium hydroxide it blackens, being converted into a mixture of the hemioxide which is intensely black, and the normal oxide. This decomposition, however, takes place much more slowly than with the salts of the protoxide, so that (unless heat has been applied), if after ten or fifteen minutes the alkali is poured off and the oxides are dissolved with dilute nitric or sulphuric acid, a considerable residue is found of the red-brown double salt which has escaped decomposition.

With continued treatment with sodium hydroxide (that obtained from metallic sodium was used as being absolutely free from chlorine), the decomposition is complete.

The oxide thus precipitated was thoroughly dried at 160 deg.—170 deg. C., weighed and ignited. Five determinations of oxygen from various specimens gave 4·73; 4·63, and again 4·24; 4·19; 4·17 per cent. of oxygen respectively. A salt with the constitution already described should yield one molecule each of hemioxide and of normal oxide, and this mixed oxide should contain 4·68 per cent. of oxygen. We have then:

	Mean of 5 determinations.	Calculated.
Oxygen per cent.	4·39	4·68

The double salt is more readily decomposed by hydrochloric and hydrobromic acid or even by alkaline chlorides or bromides. Under their action it instantly blackens. That part of the silver that exists in the form of hemisulphate is converted into black hemichloride or hemibromide. The extreme instability of those hemihaloids causes them spontaneously to resolve themselves into metal and normal haloids. They rarely remain as hemihaloid for more than an hour or two, and often for much less time. The change is often quite sudden, and is easily observed by the alteration of colour, the black of the hemihaloid passing into the metallic gray colour belonging to a mixture of normal haloid with metallic silver. The hemibromide seems to be little less unstable than the hemichloride.

This instability does not render an analysis impossible, since both the products of the change are insoluble; but renders it somewhat more difficult, as the freshly-formed silver haloid tends to run through a filter. Sometimes, indeed, it seems as if traces of the silver chloride were for a few moments soluble in water with a yellow colouration. The appearance of this yellow colour in the water is apt to be the first indication of the splitting up of the hemichloride.

Two analyses were made, one of material obtained by acting on the brown salt with dilute hydrochloric acid; this contained 81·79 per cent. of the silver. One by decomposing it with sodium chloride; this gives 81·93 per cent. A substance having the formula already given should, by conversion into chloride, give a mixture in which two-thirds of the silver should exist as hemichloride, and one-third as normal chloride. We have then:—

	Found 1	Found 2	Mean.	Calculated.
Ag per cent. ...	81·79	81·93	81·86	82·35

a result sufficiently close to afford a confirmation of the constitution assigned.

When the brown salt is decomposed with dilute hydrobromic acid or an alkaline bromide, a corresponding result is obtained. By treatment with hydrobromic acid a mixed bromide resulted which proved to contain 66·06 per cent. of silver.

A general consideration of all the reactions which I have obtained seems to indicate that the action of sulphuric and sodium hypophosphite on silver carbonate does not lead directly to the production of the double salt which I have described, but that the hemisalt is produced in excess, often in large excess; that the nitric acid oxidizes this excess, being able to attack the *free* hemisalt, but not that portion which is combined with protosalt and so rendered stable. It follows that whatever has been the original relative proportion between the two salts the nitric treatment leaves always one molecule of each. If it were possible to control the formation, it is not improbable that a pure hemisulphate might be obtained. But the action of the hypophosphite tends so strongly to carry the reaction still further that reduced silver appears, and in removing this with nitric acid the double salt results. A confirmation of this is found in the fact that the treatment with nitric acid much reduces the deep terra-cotta colour of the original product. If this difficulty can be overcome we may yet obtain hemisalt isolated.

There is reason to suppose that numerous other compounds of silver hemioxide with oxyacids may exist. These compounds cannot be obtained by acting on the normal salts with sodium hypophosphite or with hypophosphorous acid, but it appears probable that they may be produced when the normal salts are formed in the presence of sodium hypophosphite. If to the last-named salt we add a solution of salt capable of a precipitating silver nitrate, and then further add silver nitrate, we obtain precipitates which after standing some hours with frequent stirring appear to contain compounds of silver hemioxide. But these products do not resist the action of nitric acid; consequently there appears to be no means of purifying them, and of deciding with certainty as to their nature.

When sodium citrate and hypophosphite are dissolved together and a little silver nitrate added to get rid of chlorides, then after standing and filtering more silver nitrate is added, a precipitate is obtained which after a time appears to contain silver hemicitrate in an impure form. When a little of this precipitate is put into much water containing a trace of ammonia (five or six drops to 100 c.c.), a fine rose-red solution results.

Most oxysalts of silver are darkened by light. In a paper published in this journal for July, 1887, I mentioned that films of these salts exposed to light and then treated with dilute hydrochloric or hydrobromic acid appeared to be converted into hemichloride or hemibromide, and argued therefrom that oxyacid hemisalts of silver must exist, and be formed by action of light on normal salts. I believe that I have been able to prove the existence of a hemisulphate with a strong probability that many other hemisalts may be formed, both by the action of light and also by purely chemical means. It is possible that at some future time we may succeed in obtaining some of these compounds in a state of purity.—*American Journal of Science.*

A PHOTOGRAPHIC METHOD OF MAPPING THE MAGNETIC FIELD.

The common method of obtaining a cross-section of the field of force of a magnet by means of iron filings is very satisfactory when only temporary representations of the field are desired, but there has been wanting a suitable method of making a permanent map. It occurred to the writer that by employing a photographic dry plate a negative could be obtained from which any desired number of prints could be made, and it would have the additional advantage of representing the figures in their true colours. For obtaining the field of a bar magnet, the magnet was placed upon a large card previously marked with concentric circles and parallel lines to facilitate the centring of the magnet. A photographic dry plate was placed, film side up, directly upon the magnet. Iron filings were held at a distance of a foot above the plate in a bag of loosely woven flannel, from which, by shaking the bag, they could be evenly distributed over the surface of the plate. The plate was then held at two points and tapped gently until the filings had arranged themselves along the lines of force. The room up to this point was, of course, only illuminated by non-actinic light, and the exposure was now made by turning the key of an electric lamp supported at a convenient distance directly above the centre of the plate; the position of the lamp is a matter of considerable importance, as light from one side of the plates will cause the filings to cast a shadow and give an incorrect representation of the lines of force. Where

an electric light cannot conveniently be used, nearly as good results may be obtained by holding a lighted match over the plate. After the exposure the plate is tapped so that the filings may slide off, and the few which still cling to the surface of the film are carefully removed by means of a fine camel's hair brush. The negative is then developed and fixed in the usual way. The plates employed should be of a sort to give the strongest possible contrast, and a slow plate, such as Carbutt's process plate, was found to give most satisfactory results, it requiring an exposure of about 20 seconds.

Exhibitions.

SOCIETY.	ENTRIES CLOSE.	OPENS.	CLOSES.	ADDRESS OF SECRETARY.
Phot. Soc. India	—	Dec. 1893.	—	Calcutta.
Ryde, Isle of Wight	—	Jan. 4	Jan. 5	
West London	—	Jan. 10	—	Lionel C. Bennett, 30, Blandford Road, Bedford Park, W.
Toronto (Canada) Camera Club	Jan. 8	Jan. 12	Jan. 14	
Louth	—	Jan. 26	—	S. Francis Clarke, L.D.S., 8, Upgate, Louth.
Cleveland Camera Club ...	Jan. 25	Feb. 1	—	J. J. Hallam, 11, Amber St, Saltburn-by-the-Sea.
Torquay Photo. Soc.... ...	Feb. 3	Feb. 14	Feb. 18	H. C. Howell, Nutley, Torquay.
Woolwich Polytechnic Phot Soc.	—	Feb. 16	Feb. 18	W. Dawes, 145, Chesnut Rd., Plumstead, Woolwich.
Holborn	—	Feb. 18	Feb. 2	F. J. Cobb, 3, Albion Grove, Barnsbury, N.
Fillebrook Atheneum ..	Feb. 20	Mar. 1	Mar 2	J. W. Spurgeon, 1, Drayton Villas, Leytonstone.
Forfar, N.B.	—	March		
Philadelphia (U.S.A.) Phot Society	Mar. 15	April 17	April 29	Robt. S. Redfield, chairman, Exhibition Com. 1,601, Callowhill St. Philadelphia, U.S.A.

Societies' Notes.

THE inaugural meeting of the Harringay Photographic Society will be held on Thursday, January 5th, at the Endymion Refreshment Rooms, adjoining Harringay Park Station (Midland Railway), commencing at eight o'clock, when Mr. Dudley Towers will take the chair. For further particulars apply to C. Frith, 8, Cavendish Road, N.

THE Durham City Camera Club will hold an exhibition of members' work on February 14th. One open class for a set of six lantern slides is also included, a silver and bronze medal being offered as prizes. Exhibits must be sent, with entrance fee of 1s., to R. Hauxwell, The Avenue, Durham, before February 3rd. Each competitor in the open class may send in twelve slides, and all exhibits will be retained for a few days to give the inmates of the Durham Workhouse and other charitable institutions an exhibition.

Societies Meetings.

Brixton and Clapham.—An open night wns held on 20th inst., when an exhibition of lantern slides of "Granada and the Alhambra," was given by Mr. F. P. Cembrano. The audience followed the lecturer throughout with rapt attention.

City of London College.—On the 21st inst., demonstration of flashlight photography. Several flashlight exposures were made by Mr. Fell, and developed by Mr. A. W. Cook. Prints and lantern slides by members were handed to the Secretary for exhibition at the college soiree, to be held on the 31st inst.

Ipswich.—The society held a meeting on 22nd inst. Mr. Webster first demonstrated printing platinotype by the oxy-hydro-magnesium light. About a hundred selected summer holiday slides were then shown with the lantern by Mr. Wiggin, contributed by Messrs. Curtis, Corder, Fry, Hill, Hughes, Joslyn, etc., some of the Scilly Island ones being much appreciated. The evening concluded with a lecturette by Dr. J. E. Taylor, illustrated by micro-photographs. About a hundred and fifty members and friends attended. Dr. E. Webster Adams and Mr. Benson were afterwards elected members.

Leeds.—On 12th inst. the following gentlemen were elected the officers of the society for the ensuing year:—President, Mr. J. H. Walker; Vice-Presidents, Messrs. E. H. Jacob, M.A., M.D., and S. A. Warburton; Hon. Secretaries, Messrs. Herbert Denison and Robert Steele; Hon. Treasurer, Mr. T. W. Thornton; Hon. Lanternist, Mr. H. P. Atkinson; Hon. Librarian, Mr. T. Butterworth. Mr. Godfrey Bingley introduced a discussion on Film Photography, first describing the composition of celluloid films, and their advantages over glass, on account of their lightness, non-liability to break, and the small space they occupy. But the chief part of his remarks applied to the Eastman films in the roll-holder and the Kodak. His experience had been rather unfortunate; while he got many good negatives, he had many with markings—electric, dark lines, and telegraph-wire-like lines across, some scratched, while others tore diagonally across while in the holder. Mr. Smith, representative of the Eastman Company, was present, and with his characteristic energy combated some of the complaints, and showed negatives and prints from their films, which were very fine. While admitting failures at times, he stated that they were always willing to compensate, when satisfied with defects complained of, by supplying new rolls in their stead. This was corroborated by Mr. Bingley. Mr. Smith also stated that improvements were being made, and that he expected their films in 1893 would be as near perfection as possible. Dr. Jacob, and Messrs. Walker, Warburton, Rodwell, Middleton, Denison, and Steele took part in the discussion.

Newcastle.—The monthly meeting was held on 20th inst., Mr. John Watson in the chair. Several new members were elected. The following gentlemen were nominated for election at the annual meeting next month, viz, President, J. Pattison Gibson; Vice-Presidents, M. Auty and H. G. Ridgway; Treasurer, Frederick Park; Secretary, Edgar G. Lee; Assistant-Secretary, James Brown; and Council. Mr. James Brown afterwards read an interesting paper, entitled "Some Hints on Landscape Work, what to Do, and what to Avoid," illustrated by over 100 lantern slides.

South London Photographic Society.—19th inst., ordinary meeting at Hanover Hall, Hanover Park, Peckham, the President, Mr. F. W. Edwards, in the chair, Mr. John Burgess, F.C.S., intimated that there were one or two points of difficulty with regard to his new process of colour printing, which he desired to clear up before describing the process before the Society, and therefore postponed his paper on the subject, and substituted for it "Hints on the Use of Magnesium." He said there was a great charm about the use of that substance, as it enabled persons to take portraits of their friends at home with their usual surroundings, and they were in no way dependent upon the weather in carrying out their intentions. He had for many years used magnesium largely for copying purposes, and his method of burning it was very simple. Sufficient magnesium ribbon was taken to produce the required amount of illumination, and cut into lengths—the greater the number the less time it took to burn. The lengths were fastened together at one end with carbon, and the whole inserted in a glass tube. On the outside of the tube a cork or piece of wood was fitted, for convenience of holding the same. A spirit lamp was then placed on the top of the back of a camera, and after the persons to be photographed were arranged and the adjustments of the camera carried out, the lamp was lighted. The glass tube was then taken, and one end placed close to the lighted lamp, while the lengths of magnesium were pushed forward from the opposite end by means of a taper, or something of that kind, into the flame, thus causing the magnesium to ignite and burn as it was pushed forward. The lecturer exposed two plates to illustrate his process, which were afterwards developed and handed round for the members' inspection. Various methods of using magnesium powder were described, and for illuminating a larger space the lecturer considered this was more useful than the ribbon, provided the powder was mixed with chlorate of potash. Some persons objected to the use of the latter by reason of its explosive character, but if two parts of castor sugar were added to one part of chlorate of potash, and afterwards mixed with the amount of magnesium to produce the required amount of light on burning, it would be found to consume quietly, and had the merit of being non-explosive. This mixture should be burned in a tin saucer, or other similar utensil. A simple method of igniting the above mixture was to take a small quantity of sulphuric acid on a glass rod, and allow it to drop on the powder, which would cause it to burst into flame. Magnesium produced the most active light known. Its intensity was increased by consuming in oxygen gas. The fumes arising from the combustion could be absorbed by passing them through a solution of hydrate of soda.

Sutton.—Meeting held on 6th inst., Mr. De Clifford in the chair. Many sets of prints were forwarded for the summer competition, the judges awarding the prize to Mr. J. P. Hoole for an exceedingly good set of twelve land and seascapes. A pleasant hour was afterwards spent in inspecting a number of prints, etc., kindly lent by the Editor of the AMATEUR PHOTOGRAPHER.

SOCIETIES' FIXTURES.

Dec. 29.—Camera Club.—Exhibition and Description of Novelties in Apparatus, Photo Materials, etc.
„ 29.—Sutton.—Amateur Photographer 1892 Prize Slides.
„ 30.—Cleveland.—Flashlight Demonstration.
„ 30.—Croydon.—Conversational Meeting.
„ 30.—Holborn.—Social Discussion.
„ 31.—Polytechnic (London, W.).—Amateur Photographer 1892 Prize Slides.
Jan. 2.—Richmond.—Amateur Photographer 1892 Prize Slides.
„ 2.—S. London.—Lantern Night.
„ 2.—Camera Club.—Smoking Concert.
„ 2.—Kensington and Bayswater.—"Cold Bath Platinotype Paper," Mr. S. G. B. Wollaston.
„ 3.—W. London.—Technical Social Meeting.
„ 3.—N. Surrey.—General Technical Discussion.
„ 3.—Guildford.—Amateur Photographer 1892 Prize Slides.
„ 3.—Blackheath.—"Platinotype Process," Mr. S. G. B. Wollaston.
„ 3.—Herefordshire.—"A Caravan Tour through Wales," Illustrated Slides, Messrs. Edwards and Gethen.
„ 3.—Bolton.—"Stops, their Areas, and Relations to Exposure," Mr. W. Banks.
„ 3.—Oxford.—"Gelatino-Chloride Paper," Mr. J. C. S. Mummery.
„ 3.—Hackney.—Smoking Concert.
„ 4.—The Photo Club.—"Collodio-Chloride Printing."
„ 4.—Eastbourne.—General Meeting.
„ 4.—Wakefield.—Criticism of Lantern Slides shown at Church Institution.
„ 4.—Elizabethan.—Members' Evening for Practical Work, etc.
„ 4.—York.—Exhibition of Slides from Hull Society. Election of Officers, Annual Report.
„ 5.—Hull.—"New Developers, etc.," Mr. Howlett, F.R.C.S.
„ 5.—Camera club.—Lantern Evening.
Jan. 6.—Lewisham.—"Lantern Slide Making on Collodion Plates," Mr. E. Eastwood.
„ 6.—Brighton and Sussex (Nat. Hist.).—"Stereoscopic Photography," Mr. A. H. Webling.
„ 6.—Blackburn.—Amateur Photographer 1892 Prize Slides.

The Benevolent.—Meeting of committee held December 14th, Mr. W. Bedford in the chair. An application for a loan of £8 to pay arrears of rent, and redeem lenses from pawn was considered. The Secretary had corresponded with the applicant, who said he could not give reference; and as the case seemed very urgent, had made a preliminary advance of £2 on security of pawn tickets. The correspondence was carefully considered, the Secretary's action was confirmed, and he was instructed to redeem and forward the lenses, holding the pawn tickets for other goods as security, and to report to the applicant that the Benevolent could not grant further assistance without references. An application was read from a crippled photographer who had been previously assisted by the association, and who now applied for a grant to redeem from pawn a lantern bought for him by the association two years ago, which was his sole means of subsistence. An accident during the summer was the cause of his again getting into pecuniary straits. The sum asked for, £3, was granted as a loan. The Secretary reported that an application for immediate relief had been made to him at the office of the association, by a man, evidently a photographer, who stated that he was penniless and ill, and was walking from London to his home in the provinces, over a hundred miles away. The Secretary had offered him a good meal, and to pay his railway fare; an offer which he accepted with great profession of gratitude when he thought the money was going to be given to him, but rejected with scorn and anger when he found that the Secretary intended to personally purchase the ticket and see him into the train. The resignation of Mr. H. D. Atkinson, whose removal from London prevents his continuing on the committee, was accepted with regret, and Mr. R. Child Bayley was elected in his place. Six new members were elected.

To Correspondents.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

Rules.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns MUST be received by TUESDAY MORNING'S Post.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

QUERIES.

5904. **Hanover.**—Can anyone tell me if English plates and chemicals can be obtained in above town? Should also feel obliged for any hints as to what to photograph there, exposure, etc.—Deutsch.

Correspondents not seeing their queries inserted are requested to look for the same under "Editorial."

QUERIES UNANSWERED.

Nov. 25th.—Nos. 5880, 5881.
Dec. 2nd.—Nos. 5886, 5890.
„ 9th.—No. 5894.
„ 16th.—No. 5900.
„ 23rd.—Nos. 5902, 5903.

ANSWERS.

5849. **Lens.**—A suitable lens for a small plate would be a Gem lens, which can be obtained from Lancaster and Sons, Colmore Row, Birmingham, price 7s. or 9s. These are Petzval portrait lenses of 2 in. focus, working about *f*/4.—Editor.

5875. **Acid Alum Bath.**—The action of this bath on negatives is good, hardening the film and preventing stains, etc. For bromide paper it acts well, except when ferrous oxalate is used as the developer, when ferric oxalate is liable to be formed, and the image disappear altogether. If a solution of sodium sulphite is made, about 1 in 4, and alum and citric acid added in the proportion of one-eighth the quantity of sulphite, and then this added to the fixing bath, there should be no precipitate. A precipitate shows that you are using too much alum and acid.—Editor.

5878. **Plate Numbers.**—A vexed question which was answered, so far as Ilford plates, in a letter in our issue of 16th inst., p. 445.—Editor.

5884. **Film Slide.**—Turnbull's film slides are satisfactory. To be obtained from England, 21, Charles Street, Notting Hill, W.—Editor.

5893. **Revolving Show Case.**—Percy Lund and Co., Memorial Hall, Farringdon Street, E.C., could probably supply.—Editor.

5895. **Bromide Enlargements.**—(1) It depends entirely upon the light and negative; it is really impossible to answer such a question. (2) W. Watson and Sons, Holborn, sell green albumenised paper.—Editor.

5896. **Yellow Tinge in Platinotypes.**—This is probably a little solarieation, which might be avoided by manipulating the print with glycerine during development.—Editor.

5897. **Camera Bellows.**—Nigrosine or any soluble black aniline dye would stain the leather.—Editor.

5898. **Hydroquinone Developer.**—Increase of alkali and water will give softer effects. Beach's developer has rather a tendency to dense skies. See article p. 479 this issue.—Editor.

5899. **Chemicals.**—The most deliquescent chemicals used in photography are—ammonium citrate, iodide, sulphocyanide; barium bromide and iodide; cadmium chloride; calcium chloride and iodide; cupric chloride, gold chloride, ferric chloride, lithium chloride and iodide; magnesium chloride, platinum bichloride; potassium carbonate, acetate, cyanide, nitrite, citrate, chloroplatinite, sulphocyanide, caustic; sodium caustic, bromide, iodide, citrate, nitrite; strontium haloids; uranium bromide and nitrate; zinc haloids; chloride of lime.—Editor.

5901. **Painting Bromides.**—Coat them with a little size to which chrome alum has been added, or use ox-gall and spirit to mix your colours.—Editor.

EDITORIAL.

Special Notice.—*We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us* before Tuesday morning's *post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.*—Ed. Am. Phot.

A. M. Z.—The reflector principle is very satisfactory. We have had one of the cameras in use for over two years, and are quite satisfied with it.

A. W. Cook.—You certainly may think yourselves lucky you got off without a mishap; we should say it was Providence and nothing else. The covers for the Amateur Photographer are arranged to take a volume without advertisements; when half a sheet is literary matter and half advertisements, we should advise you to bind it in. It will make but little difference to the appearance.

Isis.—(1) We have used the camera you name, and judging from our results it is very suitable for lantern slides and enlarging. (2) If you stick to the films sent out with the camera you will not do wrong, and our experience is that these films will keep at least twelve months after exposure without deterioration; longer than that we cannot speak of because we have not tried them. (3) The apparatus is thoroughly reliable, and the illumination perfectly even; we are so satisfied with it that we have got one for our own use. The ventilation will prevent the metal getting red hot. Many thanks for good wishes, which are reciprocated.

J. W. Forrest.—Always pleased to lend slides.

Gravity (Birmingham).—(1) What you want is a projection ocular, which costs about £2. These are much recommended now for photography. (2) The exposure is always a difficult matter, but, as a guide, when the magnification is fifty times, the exposure will be two minutes; when 100, 8 minutes; when 200, 20 minutes. (3) Rather thin, soft negatives are the best. (4) You can use no better paper than the one you are now using.

J. N. K.—If the bath is old and stale and acid, yellow whites are almost certain to appear. Fresh sulphocyanide should be added at intervals, and the bath tested for acidity.

P. Ennis.—Thanks for paper, which will appear in due course.

Mrs. Cleasby.—The formula used was

Carbonate of soda	1 oz.
Carbonate of potash	1 „
Ferrocyanide of potash	1 „
Distilled water	10 „

About three drachms are required for a 7 by 5 plate.

F. J. Thornton.—The negative is placed in position, and the outside screws tightened up so as to hold the same firmly; a daub of wax compound is placed at the four corners of the opal, which is then placed on the negative and the back shut down; this causes the opal to adhere to the back, so that it may at any time be lifted with the back for examination.

W. H. PRATT.—We have not found any great difficulty in seeing the image on the ground glass. We have nearly always found it possible to screen the image by shifting the camera into our own shadow. We can find no previous queries.

J. THOMAS.—Your plates received; we will develop and return. We are sorry we cannot accede to your other request.

Sale and Exchange

RULES.

CHARGE. **Twelve** *words or less for* **Fourpence.** *Every additional* **three** *words,* **one penny.** *The name and address of the sender* **must be paid for.** *(A single figure, or group of figures undivided by letter, space, stop, or words, counts as* **one word**; *compound words count as* **two** *words.)*

DEPOSITS.—*The money for goods forwarded on approval may be deposited with the Publishers of the* AMATEUR PHOTOGRAPHER, *who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.*

ADVERTISEMENTS *can be inserted under a number, the name and address being registered, and letters forwarded for a fee of* 3*d. to cover postage.*

PAYMENTS *should be made in Postal Orders or* **Postage Stamps.**

ADDRESS.—*All advertisements (which can be received up to* **Tuesday** *mid-day) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange,* AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E.C."*

COMMISSION.—*A charge of* 2½ *per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge* 1*s.*

PAYMENT.—*All payments are to be by cheques or Postal Orders, made payable to* **Hazell, Watson, and Viney, Ld., 1, Creed Lane, London, E.C.**

CARRIAGE *must be paid on all apparatus sent for report, and they will be returned* **carriage forward.**

REPORTING.—*Apparatus may be sent to the* EDITOR, AMATEUR PHOTOGRAPHER, 1, *Creed Lane, London, E.C., who will report upon the apparatus to the* **buyer** *for a minimum fee of* **2s. 6d.**, *or a commission of* **2½ per cent.**, *upon the sale price of the apparatus.*

Hand-Cameras, etc.—Swinden and Earp's hand-camera, cost £7 net, price £5, as new.—A. Bean, Snaith, Yorkshire.

Hand-cameras. A quite new No. 5 Eastman's Kodak, 7 by 5, with plate arrangements and a staff tripod for same, film for 40 exposures, only two or three used, cost £16 9s. 6d. a few months ago, £10; a Fallowfield's Facile, R.R. lens, and staff tripod, cost £6 5s., £3 10s.—Apply, 25, Lansdowne Crescent, Notting Hill.

Facile hand-camera, R.R. lens, as new, and solid leather case, £3 15s. 6d.—F. C. Newland, Kingstown, Dublin.

Lenses, etc.—1890 half-plate Instantograph lens, shutter, adjustable diaphragms, 15s.—Godley, Killegar, Killeshandra.

Adams' quarter-plate portrait lens fitted with Waterhouse stops, cost 35s.; also Thornton-Pickard instantaneous shutter fitted with speed indicator, cost 20s., to fit above lens; both nearly new, take £2, or any reasonable offer.—Asbery, Co-operative Stores, Scunthorpe, Doncaster.

Sets.—Lancaster's whole-plate special patent camera, with rectigraph and W.A. lens, chronolux shutter, focusser, two slides, dark cloth case, cost £18, price £12, or offers.—No. 358, office of this paper, 1, Creed Lane, E.C.

Lancaster's International half-plate, two dark slides, stand, and splendid aluminium lens, Thornton-Pickard shutter and case, £5, or offers; also Lancaster first quality enlarging lantern, 6 in. condenser, achromatic, with rack and pinion movement, only been used once, £5 10s., or offers.—Temperton, 59, Corporation Street, Manchester.

Sundries.—AMATEUR PHOTOGRAPHER, 1889 to 1892; also "British Journal of Photography," 1891 and 1892. What offers in cash?—Leake, West Winch, Lynn.

WANTED.

Cameras, etc.—Camera (Lancaster's Instantograph), half or quarter plate, good condition.—Thomas Blamey, Camele, Veryan, Grampound Road, Cornwall.

Shutter, etc.—Wanted, Hare's half-plate changing box and Thornton-Pickard stereo shutter.—No. 357, office of this paper, 1, Creed Lane, E.C.

It is unnecessary to send an advertisement for the "Sale and Exchange" column for more than one insertion, as the goods are usually disposed of when the first advertisement has appeared.

Bargains in Hand Cameras.—No. 5 folding Kodak, carries fifty-four films, rapid rectilinear lens and shutter, extending leather bellows, covered morocco, finder, etc, £9 9s., cost £13 13s.; Luzo hand-camera by Robinson, Regent Street, 100 films, rapid rectilinear lenses, shutter, finder, in leather case, as new, £2 12s. 6d.; Optimus Minimus hand-camera, quarter-plate, for twelve plates, Optimus Euryscope lens, roller blind, shutter, two finders, bag changing, covered morocco, finest condition, £4 17s 6d; Talmer hand-camera, carries twelve quarter-plates, fine portrait or view lens, shutter, finder, bag changing, etc., finest condition, 47s. 6d.; Key hand-camera, by Platinotype Company, rapid rectilinear lens, shutter and six slides, size quarter-plate, finest order, £4 12s. 6d.; C Daylight Kodak, rapid rectilinear lens, rotating stops, shutter, finder, etc., covered morocco, carries 24 films, quite new, £3 15s.; No. 4 Kodak, as new, size 5 by 4, carries 100 films, fine rapid rectilinear lens, instantaneous shutter, in solid leather case, £7 7s.; Optimus Magazine, very finest order, Optimus rapid rectilinear lens, carries twelve quarter-platee, roller blind, shutter, focussing adjustment, £5 5s; Rouch hand-camera, quarter-plate rapid rectilinear lens, roller behind shutter, bag changing, as new, £3 17s. 6d.; Blair's 5 by 4 hand-camera, good lens, time and instantaneous shutter, two finders, rack focussing, three double dark-slides, as new, £3 3s.; Kodak No. 1, best R.R. lens, carries 100 films, best order, in leather case, 40s. All above are warranted as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium). Second hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Camcras and Sets.—10 by 8 camera fitted all latest improvements, back and front extension, for wide-angle pictures, leather bellows, revereing back, rising and falling front, two double slides, grand condition, take £6 10s. lot; whole-plate Optimus Rayment camera, double extension, leather bellows, rising, falling, and brass fronts, three double dark slides, Optimus rapid rectilinear lens, Waterhouse stops, three fold stand and case, lot as new, £11 5s.; whole-plate camera (British), by Chapman, double extension, leather bellows, rising front, etc., very fine rapid rectilinear lens, Waterhouse stops, three double slidee, folding stand and case, grand lot, as new, £8 5s.; half-plate camera by Houghton, Holborn, double extension, wide-angle movement, rising and falling front, leather bellows, etc., rapid rectilinear lens, irie stops, three double slides, three-fold stand and case, as new, £6 10s., warranted; half-plate Spanish mahogany camera, by Lonsdale, Leeds, wide angle movement, double extension, leather bellows, etc., rapid rectilinear lens, Waterhouse stops, double dark slide, and folding stand, £4 10s.; Lancaster's half-plate 1892 instantograph camera, all latest improvements double extension, leather bellows, etc., double slide, quarter carrier, very fine rapid rectilinear lens, iris stops, and folding stand, eet complete, 75s.; half-plate camera, by Percy Lund, back extension, conicalleather bellows, three double slides, rapid rectilinear lens, shutter, folding stand, and case, as new, take £4 10s.; quarter-plate Shew's Eclipse pattern camera (pocket), reversing back, leather bellows, etc., three double slides, rapid rectilinear lens, rotating stops, and roller blind, shutter, fine lot, as new, £2 12s. 6d.; quarter-plate instantograph camera, lens, iris stops, double slide, and folding stand, 27s. 6d.; quarter-plate Le Merveilleux set, by Lancaster, complete, 15s.; quarter-plate extending camera, best order, good lens, two double book-form slides, and folding stand, 17s. 6d All above sets guaranteed in every detail as described. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium). Second-hand apparatus bought, sold, or taken in exchange. Inspection invited.

Bargains in Lenses.—Optimus No. 3 B portrait lens by Perken, Son and Rayment, as new, Waterhouse stops, rack focusing, to cover whole-plate, take £6 15s.; Optimus portable symmetrical, size 9 by 7, rotating stops, covers well, works *f*/11, as new, 65s.; 9 by 7 Optimus rapid Euryscope lens, Waterhouse stops, moveable hood, grand definition, as new, £5 5s.; whole plate portrait lens, Waterhouse stops, rack focussing, covers well, as new, 65s.; whole-plate rapid rectilinear lenses, by Parker, Holborn, covers well to edges, Waterhouse stops, moveable hood, as new, 45s.; quarter-plate Optimus detective camera lens, by Perken, Son and Rayment, Waterhouse stops, as new, 27s. 6d.; half-plate Lancaster's rectigraph lens, thorough order, covers well, Waterhouse stops, take 32s. 6d.; half-plate Lancaster Instantograph lenses, iris stops, and instantaneoue shutter, 15s.; half-plate Ross' rapid symmetrical lens, as new, fine definition, Waterhouse stops, £3 17s. 6d.; Ross' No. 2 portable symmetrical, rotating stops, 4 in. focus, finest order, 42s.; Shew's C. D. V. portrait lens, rack focus, Waterhouse stops, finest condition, 17s. 6d.; Optimus quarter-plate portrait lens, rack focuseing, Waterhouse stops, quite new, 21s.; 5 by 4 Optimus rapid rectilinear, by Perken, Sou, and Rayment, Waterhouse stops, 27s. 6d.; Swift 5 by 4 wide-angle rectilinear, 5 in. focus, rotating stops, 32s. 6d.; ¼-plate hand-camera lens, by Laverne, rapid rectilinear, adjustable focus, 15s., quite new. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street. City (late Goy's Medium). Every description of apparatus bought, sold, or taken in exchange.

Magic Lanterns and Slides. — Walter Tyler's Helioscopic is perfection of all lanterne, supplied to Indian Government, School Boards, science classes, clergy, and exhibitors throughout the world. Impossible to have lanterns give better definition or more satisfactory results; specially constructed lens which no other lantern possesses.—Walter Tyler, 48, Waterloo Road, London.

Walter Tyler's Best Triples and Biunials are unsurpassed, and perfect in every detail. Good biunials, mahogany bodied, braes fronts, and all improvements, £7 10s.; single lantern, with 4 in. condensers, portrait front lens, 4-wick lamp, complete, in case, 27s. 6d.—Walter Tyler, 48, Waterloo Road, London.

Lantern Lenses.—Specially conetructed. Walter Tyler's new Helioscopic portrait combination lantern lens gives the most perfect definition and brilliancy, can be fitted to any lantern, and for excellence cannot be surpassed. No other maker has this lens, which is manufactured expressly for Walter Tyler, 48, Waterloo Road, London.

Regulators and Gauges.—Great reduction, in price. Either can now be had of Walter Tyler for 14s. each. The largest stock of gas cylindere in England. Best seamless steel, tested and valved, and all sizes at very low prices.

Slides from Negatives and Pictures.—Walter Tyler manufactures and coloure slides on the premises, thue ensuring speedy delivery, and prices are moet moderate.—Walter Tyler, 48, Waterloo Road, London.

Biunial Lanterns.—If you are in want of a really good biunial lantern, perfect in every respect, call and see Walter Tyler's entire brass fronted, mahogany-bodied, lined with Russian iron, and fitted with new best quality lensee, and sold at a most moderate price. The top lantern will take a 4-wick lamp. Thess are great hargains.—Walter Tyler, 48, Watsrloo Road, London.

Hire Department is now perfect. Largest and best collection of slides in the world; over 200,000 alwaye in stock. Temperance, travels, Scripture, educational, comic, tales, etc. Cheaper than any other house, no extra charge for coloured slides or effects. Special terms for large quantities.—Walter Tyler, 48, Waterloo Road, London

Lanterns and Slides.—If you wish to hire, purchase, or exchange, you cannot possibly do better than go to Walter Tyler, who makes this business a epecialite, and you will thus save dealer's and all intermediate profits.—Walter Tyler, 48, Waterloo Road, London.

Second-hand Lanterns and Slides at very moderate prices, also all kinds of apparatus. Send for large catalogue, 420 pages, with inetructions for working lanterns of all kinds, and costing an immense sum to produce, sent free for 6 stamps. Small catalogue and second-hand list, post free.—Walter Tyler, 48, WaterlooRoad, London.

Bijou Enlarging Lanterns.—Finest results with Hughes's patent rectargular condensers, half the size of ordinary make, superior definition, proper diffusion of light; scientifically constructed, not commercial; several whole and half-plate for sale, cheap.

The Marvellous Pamphengos. — Finest oil-lighted lantern, perfection, equale limelight, stood the test of over fourteen years against all imitations. Over 3,000 sold; supplied to the Government, School Boards, Science Teachers, the Clergy, and Institutions. Elegant solid brass fronts, high-class lenses, unequalled for definition and brilliancy, from £2 10s. each.

Magic Lanterns, Magic Lanterns.—Largest assortment in the world, cheapest and best, nicely japanned lantern body, 4 in. double condensers, portrait front lenses, rack and pinion, four-wick lamp, in cases, £1 7s. 6d. Others more elaborate, but cheap.

The Docwra Triple Prize Medal, highest award, supplied to Dr. H. Grattan Guinness, Capt. C. Selwyn, Madame Adelina Patti, and the Royal Polytechnic, etc.

The Malden Triple; supplied to B. J. Malden, Esq.; unparalleled results; Capt. Chas. Reads, R.N.

Fine Triple Lantern; four set of large diameter lenses, £35, cost £60. Given away.

Special Triple; mahogany, entire solid brass fronts, £12 12s.; a really good lantern, unequalled.

Elegant Mahogany Biunial; brass fronts, £7 10s.; blow-through safety jets, 6e. 6d. and 8s. 6d.; mixed gas jet, 12s. 6d.; Malden double dissolving tap, 12s. 6d.; regulators, 12s. 6d.; guages, 12s. 6d.; grand effects; particulars free, before purchasing. Send for Mr. Hughes's grandly illustrated catalogue, over 180 finely cut original wood engravings, price 6d.; postage 3d.; separate list of 60,000 slidee, price 6d.; postage 3d.; pamphlets free; second-hand liets of bargains.—W. C. HUGHES, Brewster House, Mortimer Road, Kingsland, London, N. 50 slides, all nicely coloured, on loan for 3s., in special despatch boxes.



GETTY CENTER LIBRARY
3 3125 00713 7942